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The Bulletin of Zoological Nomenclature

The Official Periodical
of the International Commission
on Zoological Nomenclature



ICZN

THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

The *Bulletin* is published four times a year for the International Commission on Zoological Nomenclature by the Trustees of the Natural History Museum. The annual subscription for 2015 is £250 or US\$395 or €320, postage included; individual subscribers for personal use are offered a subscription of £125 or US\$195 or €160. All manuscripts, letters and orders should be sent to:

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Abstracts of Applications and Opinions, Comments in full and details of the names published in the *Official Lists and Indexes of Names and Works in Zoology* are posted on the Commission's website (<http://iczn.org>)

Cover image: *Octopus vulgaris* Cuvier, [1797] known as the common octopus, Illustrated by Ernst Haeckel in *Kunstformen der Natur*, pl. 54, fig. 4. The names *Octopus* and *Octopus vulgaris* were placed on the Official Lists of Generic and Specific Names in Zoology by rulings in Opinions 233 and 1681. The common octopus is remarkable amongst invertebrates for its spatial learning capacity, navigational abilities, camouflage techniques and use of tools.

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BULLETIN OF ZOOLOGICAL NOMENCLATURE

Volume 72, part 1 (pp. 1–106)

31 March 2015

Notices

(1) Applications and correspondence relating to applications to the Commission should be sent to the ICZN at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each Volume and available online (at <http://iczn.org/content/guidelines-case-preparation>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will, where possible, answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should preferably be sent by e-mail to 'iczn@nhm.ac.uk'.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at <http://iczn.org/content/instructions-comments>).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to iczn@nhm.ac.uk.

New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (Volume 71, part 4, 20 December 2014) went to press. Under Article 82 of the Code, the prevailing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3674: *Collohmanna* Sellnick, 1922 (Arachnida, Acari, Oribatida): proposed conservation by giving it precedence over the senior subjective synonym *Embolacarus* Sellnick, 1919. R.A. Norton & E.A. Sidorchuk.

CASE 3675: Monograph on Cretaceous corals by Filkorn & Pantoja-Alor (2009) (Cnidaria, Anthozoa, Scleractinia): proposed acceptance of the CD-ROM edition as a published work. H.F. Filkorn & J. Pantoja-Alor.

CASE 3676: *Varanus indicus* Daudin, 1802 (currently *Varanus cerambonensis* Philipp, Böhme & Ziegler, 1999; Reptilia, Squamata): Proposed conservation of the

original taxonomic identity through the suppression of the junior synonym and invalidation of the neotype. V. Weijola.

CASE 3677: Proposed application of Article 1.3.7 to exclude as genus-group names the modifications of species-group names that are formed by addition of the standard suffix *ana* or *iana*. E. Gittenberger.

CASE 3678: Proposed insertion of the term 'superspecies' in the Glossary of the Code, with a reference to similar terms. E. Gittenberger.

CASE 3679: *Geophilus easoni* Arthur, Foddai, Kettle, Lewis, Luczynski & Minelli, 2001 (Chilopoda): proposed conservation of the specific name. L. Bonato & A. Minelli.

CASE 3680: *Gnathoribautia bonensis* (Meinert, 1870) (Chilopoda): proposed conservation of the specific name. L. Bonato & A. Minelli.

CASE 3681: *Liancalus* Loew, 1857 and *Scellus* Loew, 1857 (Insecta, Diptera, DOLICHOPODIDAE): proposed conservation of the names by designation of *Dolichopus regius* Fabricius, 1805 as type species for *Anoplomerus* Rondani, 1856. J.B. Runyon, M.A. Ivie & N.L. Evenhuis.

CASE 3682: The work 'The White-cheeked Geese: *Branta canadensis*, *B. maxima*, *B. 'lawrensis'*, *B. hutchinsii*, *B. leucopareia*, and *B. minima*, taxonomy, Ecophysiographic relationships, biogeography, and evolutionary considerations, Volume 1, eastern taxa; Volume 2, western taxa, biogeography and evolutionary considerations' by Harold C. Hanson: proposed suppression for nomenclatural purposes. R.C. Banks, M. LeCroy & R. Schodde.

CASE 3683: *Cylindrus* Fitzinger, 1833 (Mollusca, Gastropoda, HELICIDAE): proposed conservation by suppression of *Cylindrus* Batsch, 1789, *Cylindrus* Deshayes, 1824 and *Cochlopupa* Jan, 1830. E. Gittenberger & R.A. Bank

CASE 3684: *Elasmostethus dorsalis* Jakovlev, 1876 (currently *Elasmucha dorsalis*; Insecta, Heteroptera): proposed precedence over *Acanthosoma vicinum* Uhler, 1861 (currently *Elasmucha vicina*). J.F Tsai, D. Rédei, B. Aukema, A. Carapezza, M.A. Carvajal, E.I. Faúndez, Sunghoon Jung, E. Kanyukova, P. Kment, S. Kudo, G.-Q. Liu, D.A. Rider, N.N. Vinokurov, J. Vilimová, X.-J. Wang & A. Yamamoto.

INTERNATIONAL TRUST FOR ZOOLOGICAL NOMENCLATURE

Financial Report for the year 2013

The main work of the Commission during the year was on applications from zoologists in 19 countries to resolve problems of zoological nomenclature. These were published in the *Bulletin of Zoological Nomenclature*, together with Opinions (rulings) made by the Commission on other cases. Further applications were under consideration. Advice was given by the Commission's Secretariat in response to a large number of enquiries on matters of nomenclature from zoologists worldwide.

Total income received by the Trust consisted of £34,496 for all publications produced by the Commission, £12,349 from donations, £1,056 in bank interest and investment income, and £15,696 capital gain on the sale of investments, bringing the total income for the year to £63,597.

Expenditure in 2013 was £72,207 on salaries and fees of the Secretariat of the Commission, £6,834 for printing the *Bulletin of Zoological Nomenclature* and for the distribution of all publications, and £225 for office expenses and depreciation of office equipment, bringing the total expenditure to £79,266.

The Secretariat of the Commission was again housed in the Natural History Museum, London, whom we thank for their continuing support. The Trust wishes to express its thanks to all the donors listed below who have contributed to the continuation of its work during the year for the international zoological and palaeontological community.

Donations and grants were received from:

American Association of Zoological Nomenclature

Australian Entomological Society

Aves Press

Coleopterists' Society

Clive Hambler

Ichthyological Society of Japan

Japanese Society of Systematic Zoology

Pensoft Publishers

Plazi (Donat Agosti)

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Mary Wicksten (Texas A&M)

and a number of anonymous donors via the ICZN website.

C. Laws, Managing Director

INTERNATIONAL TRUST FOR ZOOLOGICAL NOMENCLATURE
INCOME AND EXPENDITURE ACCOUNT FOR THE YEAR ENDED
31ST DECEMBER 2013

Income**SALE OF PUBLICATIONS:**

Bulletin of Zoological Nomenclature	£34,220
International Code of Zoological Nomenclature	276
	34,496

GRANTS AND DONATIONS	12,349
INTEREST RECEIVED	4
INVESTMENT INCOME	1,052
CAPITAL GAIN ON SALE OF INVESTMENTS	15,696
	63,597

Expenditure

SALARIES, NATIONAL INSURANCE AND FEES	72,207
OFFICE EXPENSES	225
PRINTING OF BULLETIN & DISTRIBUTION OF PUBLICATIONS	6,834
	79,266

DEFICIT FOR THE YEAR CARRIED TO BALANCE SHEET (15,669)

Closure of the International Trust for Zoological Nomenclature

The International Trust for Zoological Nomenclature was dissolved at the end of December 2014 and the Bulletin of Zoological Nomenclature (BZN) is now published on behalf of the ICZN by the Natural History Museum, London.

We are very grateful for all ongoing individual and organisational support of the ICZN and the BZN in the interests of zoological nomenclature. It is of great assistance in enabling the Commission to carry out its important work.

All correspondence and payments for the Bulletin of Zoological Nomenclature should now be addressed to BZN, The Natural History Museum, Cromwell Road, London, SW7 5BD U.K.

There are three ways to make payments:

- (1) cheques made out to : 'The Natural History Museum';
- (2) By phone +44 20 7942 5629 to pay by credit/debit card.
- (3) by bank transfer to:

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What is an online ‘preliminary version’ of a publication in the meaning of Article 9.9 of the Code?—One more step on the trail of the Asian elephant

Alain Dubois

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Abstract. Gentry et al. (2014) challenged our statement (Dubois et al., 2014) that the lectotype designation of *Elephas maximus* by Cappellini et al. was not nomenclaturally available from the first online publication in 2013 of a ‘preliminary version’ of their work but only from the publication in 2014 of a ‘final version’ of it. The question at stake here is the meaning of the term ‘preliminary version’ in Articles 9.9 and 21.8.3 of the Code. This question is discussed in detail here and we conclude that any version of a work published online and which differs, even slightly (by even a single-letter or a single modified element of layout), in content and/or layout from the final version of the same work subsequently published online, is to be considered a ‘preliminary version’ of this work. A preliminary version is accessible online only during a limited period, before being definitively replaced by the final version, which then remains unchanged. Such preliminary versions are not available for nomenclatural purposes. In Appendix 1, we also reply to some other comments of Gentry et al. (2014) on the paper by Dubois et al. (2014).

Cappellini et al. wrote a paper discussing the status of the syntypes of the nominal species *Elephas maximus* Linnaeus, 1758 (Mammalia) and designating a lectotype among them. Dubois et al. (2014) commented on this work, and Gentry et al. (2014) published a rebuttal to their paper. As their comments clearly include misunderstandings but were published in this *Bulletin*, we feel compelled to revisit several of the problems raised by these works. However, most of their comments deal with minor points and will be replied to in the Appendix 1 of the present paper, the focus of which is put on a very important point, i.e. the status of online ‘preliminary versions’ of publications.

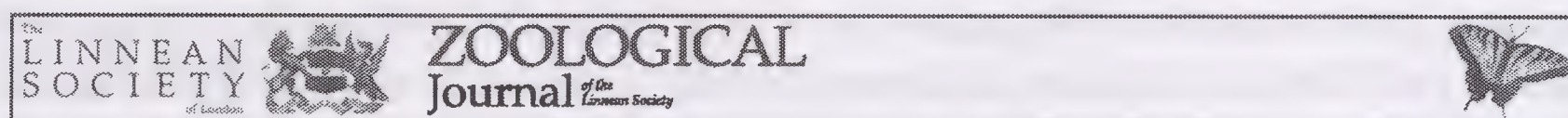
An electronic version of the paper by Cappellini et al. had been published online ‘ahead of print’ by the *Zoological Journal of the Linnean Society* (‘ZJLS’ below) on 4 November 2013. The content of this paper had later been included in the issue 170(1) of this journal published both in print and online on 14 January 2014 according to the ZJLS website. Dubois et al. (2014) stated that the electronic version of this paper distributed online ahead of print (Cappellini et al., 2013) did not meet the requirement for nomenclatural availability of the nomenclatural act it contains (the lectotype designation), and that this act became nomenclaturally effective only with the publication of the issue 170(1) of ZJLS (Cappellini et al., 2014). Gentry et al. (2014) claimed that this was wrong and that the lectotype designation was available from the original online publication, the latter having been duly registered in Zoobank, as required by Article 8.5.3 of the current Code. We disagree with this statement, for the reasons given below.

Our interpretation relies on a strict application of Articles 8.1, 9.9 and 21.8.3 of the Code.

Article 8.1 states that, to be regarded as published in the frame of zoological nomenclature, a work ‘*must be issued for the purpose of providing a public and permanent scientific record*’, and that ‘*it must have been produced in an edition containing simultaneously obtainable copies by a method that assures (...) widely accessible electronic copies with fixed content and layout.*’ The format PDF/A is given as an example of ‘*a file format that allows content and layout to be preserved unchanged.*’ It is quite clear that, according to this Article, a work not intended to provide a *permanent* scientific record, or prone to be *modified* subsequent to its first publication, is not available in zoological nomenclature. The formula ‘*with fixed content and layout*’ must be interpreted strictly, which means that any subsequent change in the content (even of a single letter) or in the format (place or aspect of any printed element in the page) disqualifies the original document as a publication available in zoological nomenclature.

Article 9.9 states that ‘*preliminary versions of works accessible electronically in advance of publication*’ do not constitute published work within the meaning of the Code. This is repeated differently in Article 21.8.3: ‘*Some works are accessible online in preliminary versions before the publication date of the final version. Such advance electronic access does not advance the date of publication of a work, as preliminary versions are not published*’. However, the Glossary of the Code fails to provide a definition of ‘*preliminary version*’. Dubois et al. (2013) gave detailed information on a number of cases of recent online early publications which were quite different in various respects from the final publications of the same works and no doubt qualify as ‘*preliminary versions*’. The changes sometimes concern large parts of the text, sometimes the figures, the layout, etc. But there is no need for such big changes to justify the use of the term ‘*preliminary version*’ for online early documents, as we will see below.

As shown in Figures 1–2, the two documents at stake in this case (Cappellini et al., 2013 and 2014), although they bear the same DOI (10.1111/zoj.12084), are different. The 2013 PDF is paginated at the top of each page from 1 to 11, whereas the 2014 document is paginated at the bottom each page from 222 to 232. The header of the first page of the 2013 PDF reads ‘*Zoological Journal of the Linnean Society, 2013. With 3 figures*’, whereas that of the 2014 document reads ‘*Zoological Journal of the*



Zoological Journal of the Linnean Society, 2013. With 3 figures

Resolution of the type material of the Asian elephant, *Elephas maximus* Linnaeus, 1758 (Proboscidea, Elephantidae)

ENRICO CAPPELLINI^{1*}, ANTHEA GENTRY², ELEFThERIA PALKOPOULOU^{3,4}, YASUKO ISHIDA⁵, DAVID CRAM⁶, ANNA-MARIE ROOS⁷, MICK WATSON⁸, ULF S. JOHANSSON⁹, BO FERNHOLM⁹, PAOLO AGNELLI¹⁰, FAUSTO BARBAGLI¹⁰, D. TIM J. LITTLEWOOD², CHRISTIAN D. KELSTRUP¹¹, JESPER V. OLSEN¹¹, ADRIAN M. LISTER², ALFRED L. ROCA⁵, LOVE DALÉN³ and M. THOMAS P. GILBERT^{1,12}

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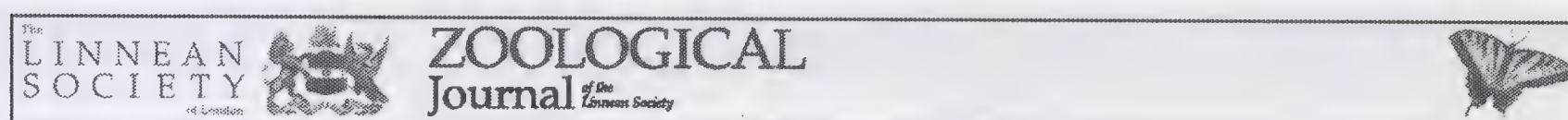
Received 24 June 2013; revised 20 August 2013; accepted for publication 20 August 2013

The understanding of Earth's biodiversity depends critically on the accurate identification and nomenclature of species. Many species were described centuries ago, and in a surprising number of cases their nomenclature or type material remain unclear or inconsistent. A prime example is provided by *Elephas maximus*, one of the most iconic and well-known mammalian species, described and named by Linnaeus (1758) and today designating the Asian elephant. We used morphological, ancient DNA (aDNA), and high-throughput ancient proteomic analyses to demonstrate that a widely discussed syntype specimen of *E. maximus*, a complete foetus preserved in ethanol, is actually an African elephant, genus *Loxodonta*. We further discovered that an additional *E. maximus* syntype, mentioned in a description by John Ray (1693) cited by Linnaeus, has been preserved as an almost complete skeleton at the Natural History Museum of the University of Florence. Having confirmed its identity as an Asian elephant through both morphological and ancient DNA analyses, we designate this specimen as the lectotype of *E. maximus*.

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Fig.1. First page of the PDF of Cappellini et al. (2013), which has been accessible on the website of the *Zoological Journal of the Linnean Society* from 4 November 2013 to 14 January 2014. Downloaded on 13 November 2013.

Linnean Society, 2014, 170, 222–232. With 3 figures'. The footers of the 11 pages of the 2013 PDF bear the mention '© 2013 The Linnean Society of London, *Zoological*



Zoological Journal of the Linnean Society, 2014, 170, 222–232. With 3 figures

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Fig. 2. First page of the PDF of Cappellini et al. (2014), accessible on the website of the *Zoological Journal of the Linnean Society* since 14 January 2014. Downloaded on 27 October 2014.

Journal of the Linnean Society, 2013', whereas those of all pages of the 2014 document bear '© 2013 The Linnean Society of London, *Zoological Journal of the*

Linnean Society, 2014, **170**, 222–232'. Furthermore, as the numbering of the pages starts on an odd page (1) in the 2013 PDF and on an even page (222) in the 2014 document, the headers and footers of all pages shifted respectively from right to left and from left to right when the pages were renumbered in the 2014 publication. Altogether, these changes are 23 in number, so that it is clearly impossible to consider that these two documents are 'identical'. If nothing else, these changes demonstrate that the '*fixed layout*' provision of Article 8.1.3.2 has been breached. For the purposes of zoological nomenclature, these two PDFs therefore constitute two different works, having different publication dates.

It is true that the 2013 publication was registered on 10 October 2013 on Zoobank prior to its distribution online, and that it received an LSID for this registration. This would indeed have provided nomenclatural availability to this work if the latter had been issued '*for the purpose of providing a public and permanent scientific record*', but this was not the case. At the very time where the repaginated 2014 publication was released in January 2014, the original 2013 PDF was removed from the journal's website and it is not available there any more. Only those who have saved a PDF of this initial version on their personal computer now have access to it. Clearly this situation does not comply with the requirements of Article 8.1 regarding the public and permanent accessibility of a work for its nomenclatural availability. Although it is claimed to be the *same* document (as both bear the same DOI), the version published in January 2014 is a different document. This version seems indeed to have been produced with the intention of '*providing a public and permanent scientific record*', if not online (as the ZJLS website may at any time be discontinued for some reason and there can be no guarantee of long-term permanency of any electronic archive), at least in its printed form, a physical document that has been duly distributed and deposited in libraries worldwide. For these reasons, we regard the 2013 PDF as nomenclaturally unavailable, despite its having been registered in Zoobank. As for the 2014 PDF, it was not registered *as such* in Zoobank and this online publication is therefore not available as such, but the paper version of the journal, seemingly published at the same date (14 January 2014), provided nomenclatural availability to the lectotype designation through the traditional process of paper publication.

The Zoobank entry for this work (Figure 3) provides contradictory information. It mentions the publication date of 4 November 2013, which corresponds to the 2013 PDF, not included in an issue and paginated from page 1 to 11. But it cites the reference as Volume **170**, number 1, pages 222–232, a work which was only published on 14 January 2014 (a date that is not mentioned in this entry). The Zoobank registration meant to provide nomenclatural availability was effected before the publication date announced in this entry, on 10 October 2013. As at this date the numerals for the Volume, number and pages could not be known, this information could not be present in the original registration and had to be added subsequently, presumably on 14 January 2014, or later. Furthermore, although the Zoobank registration complies with the requirement of Article 8.5.3.1 to '*give the name and Internet address of an organization other than the publisher that is intended to permanently archive the work in a manner that preserves the content and layout, and is capable of doing so*', as of 15 November 2014 no PDF of this work was available at the archiving address given there (*PubMed Central*, [<http://www.ncbi.nlm.nih.gov/>



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Journal Article: Cappellini, Enrico, Anthea Gentry, Eleftheria Palkopoulou, Yasuko Ishida, David Cram, Anna-Marie Roos, Mick Watson, Ulf S. Johansson, Bo Fernholm, Paolo Agnelli, Fausto Barbagli, D. T. J. Littlewood, Christian D. Kelstrup, Jesper V. Olsen, Adrian M. Lister, Alfred L. Roca, Love Dalén & M. T. P. Gilbert. 2013. Resolution of the type material of the Asian elephant, *Elephas maximus* Linnaeus, 1758 (Proboscidea: Elephantidae). *Zoological Journal of the Linnean Society* 170(1): 222-232.

Full Title: Resolution of the type material of the Asian elephant, *Elephas maximus* Linnaeus, 1758 (Proboscidea: Elephantidae)

Author(s): Cappellini, Enrico ; Gentry, Anthea ; Palkopoulou, Eleftheria ; Ishida, Yasuko ; Cram, David ; Roos, Anna-Marie ; Watson, Mick ; Johansson, Ulf S. ; Fernholm, Bo ; Agnelli, Paolo ; Barbagli, Fausto ; Littlewood, D. Timothy J. ; Kelstrup, Christian D. ; Olsen, Jesper V. ; Lister, Adrian M. ; Roca, Alfred L. ; Dalén, Love ; Gilbert, M. Thomas P.

Journal: Zoological Journal of the Linnean Society (Print: 0024-4082 Online: 1096-3642)

Volume: 170

Number: 1

Pages: 222-232

Date Published: 04 November 2013

DOI: 10.1111/zoj.12084

Online Archives: PubMed Central (<http://www.ncbi.nlm.nih.gov/pmc/>)

Language: English

Nomenclatural Acts (0)

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Fig. 3. Zoobank entry for the work of Cappellini et al. (2013). Downloaded on 28 October 2014.

pmc]; research carried out by us using journal and paper titles, authors and key words). Finally, this Zoobank entry also contains another inaccuracy, as it states ‘*Nomenclatural Acts (0)*’, although this paper contained one such act, a lectotype designation, which was in fact the main purpose of this work! This is due to the fact that currently Zoobank does not allow for such a registration, which will be problematic: as long as it is the case, the information about such names and acts in Zoobank cannot be accurate and reliable.

The practice of ‘Early View’ is followed by ZJLS for all its accepted papers. Each Early View is announced as such on the website, with the following explanation: ‘*Online Version of Record published before inclusion in an issue*’ (see one such example in Figure 4). Once the issue has been composed, paginated and published, the mention of the Early View is replaced in the entry by the detailed reference of the final version (see Figure 5), and the Early View is not accessible any more. For the reasons given above, we consider that all PDFs posted online by this journal ahead of print of the final paginated issue, and which later disappear definitively from the ZJLS website, are ‘preliminary versions’ of the latter as mentioned in Articles 9.9 and 21.8.3, and are therefore unavailable in zoological nomenclature. The new names and nomenclatural acts they may contain will become effective only with the paper publication of the final issue.

It could be questioned whether mere changes in the numbering of the pages and in the headers and footers of the pages are ‘relevant changes’, inasmuch as they do not

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Article Information:

- Original Article:** Interspecific social dominance mimicry in birds
- Author:** Richard Owen Prum^{1,2,*}
- Article first published online:** 23 OCT 2014
- DOI:** 10.1111/zoj.12192
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Issue: Zoological Journal of the Linnean Society, Early View (Online Version of Record published before inclusion in an issue).

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Abstract:

Keywords: avian mimicry; coevolutionary arms race; competition; convergent evolution; coral reef fishes; Hairy-Downy game; Müllerian mimicry; visual deception

Abstract Text: Interspecific social dominance mimicry (ISDM) is a proposed form of social parasitism in which a subordinate species evolves to mimic and deceive a dominant ecological competitor in order to avoid attack by the dominant, model species. The evolutionary plausibility of ISDM has been established previously by the Hairy-Downy game (Prum & Samuelson). Psychophysical models of avian visual acuity support the plausibility of visual ISDM at distances ~>2–3 m for non-raptorial birds, and ~>20 m for raptors. Fifty phylogenetically independent examples of avian ISDM involving 60 model and 93 mimic species, subspecies, and morphs from 30 families are proposed and reviewed. Patterns of size differences, phylogeny, and coevolutionary radiation generally support the predictions of ISDM. Mimics average 56–58% of the body mass of the proposed model species. Mimics may achieve a large potential deceptive social advantage with <20% reduction in linear body size, which is well within the range of plausible, visual size confusion. Several, multispecies mimicry complexes are proposed (e.g. kiskadee-type flycatchers) which may coevolve through hierarchical variation in the deceptive benefits, similar to Müllerian mimicry. ISDM in birds should be tested further with phylogenetic, ecological, and experimental investigations of convergent similarity in appearance, ecological competition, and aggressive social interactions between sympatric species. Evolutionary explanations of mimicry must consider the possibility that mimics evolve to deceive model species themselves. © 2014 The Linnean Society of London

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Fig. 4. An example of first page of 'Early View' of a work accessible online 'ahead of print' on the website of the *Zoological Journal of the Linnean Society*. Downloaded on 27 October 2014.

concern the text of the paper itself. They do, first because they will render subsequent mentions of page numbers inaccurate. It is a common practice in taxonomic papers, particularly in synonymic lists, to cite the first page of appearance of a new name or nomenclatural act in the publication where they appeared. If the work at stake

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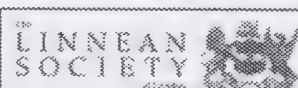
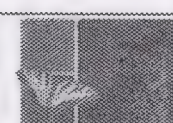
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Original Article

Resolution of the type material of the Asian elephant, *Elephas maximus* Linnaeus, 1758 (Proboscidea, Elephantidae)

Enrico Cappellini^{1,2}, Anthea Gentry², Eleftheria Palkopoulou^{3,4}, Yasuko Ishida⁵, David Cram⁶, Anna-Marie Roos⁷, Mick Watson⁸, Ulf S. Johansson⁹, Bo Fernholm⁹, Paolo Agnelli¹⁰, Fausto Barbagli¹⁰, D. Tim J. Littlewood², Christian D. Kelstrup¹¹, Jesper V. Olsen¹¹, Adrian M. Lister², Alfred L. Roca⁵, Love Dalén³ and M. Thomas P. Gilbert^{1,12}

Issue



Zoological Journal of the Linnean Society

Volume 170, Issue 1, pages 222–232, January 2014

Article first published online: 4 NOV 2013

DOI: 10.1111/zoj.12084

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Am score 106

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How to Cite | Author Information | Publication History | Funding Information

Publication History

Issue published online: 14 JAN 2014

Article first published online: 4 NOV 2013

Manuscript Revised: 20 AUG 2013

Manuscript Accepted: 20 AUG 2013

Manuscript Received: 24 JUN 2013

Funded by

- US Fish and Wildlife Service African Elephant Conservation Fund. Grant Number: AFE-0778-F12AP01143
- Danish Independent Research Council 'Sapere Aude'
- Danish Basic Research Foundation 'GeoGenetics'
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- European Commission. Grant Number: SE-TAF 1173

Abstract

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Keywords:

 Albertus Seba; ancient DNA; ancient proteins; Carl Linnaeus; John Ray; lectotypification; *Loxodonta*

The understanding of Earth's biodiversity depends critically on the accurate identification and nomenclature of species. Many species were described centuries ago, and in a surprising number of cases their nomenclature or type material remain unclear or inconsistent. A prime example is provided by *Elephas maximus*, one of the most iconic and well-known mammalian species, described and named by Linnaeus (1758) and today designating the Asian elephant. We used morphological, ancient DNA (aDNA), and high-throughput ancient proteomic analyses to demonstrate that a widely discussed syntype specimen of *E. maximus*, a complete foetus preserved in ethanol, is actually an African elephant, genus *Loxodonta*. We further discovered that an additional *E. maximus* syntype, mentioned in a description by John Ray (1693) cited by Linnaeus, has been preserved as an almost complete skeleton at the Natural History Museum of the University of Florence. Having confirmed its identity as an Asian elephant through both morphological and ancient DNA analyses, we designate this specimen as the lectotype of *E. maximus*. The mass spectrometry proteomics data have been deposited in the ProteomeXchange Consortium with the data set identifier PXD000423. © 2013 The Linnean Society of London

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Fig. 5. Partial view of first page of the entry of Cappellini et al. (2014) accessible online on the website of the *Zoological Journal of the Linnean Society*. Downloaded on 27 October 2014.

contains many pages this is very useful, and it would be inappropriate to deprive taxonomists from this tool. In the present case, the formal designation of the

lectotype of *Elephas maximus* appears in page 9 of the 2013 preliminary version and on page 230 of the final publication.

More importantly, the presence of these modifications, although slight, precludes from considering the preliminary version as a document ‘*with fixed content and layout*’ and therefore excludes this version from nomenclatural availability. Nobody should have the possibility to decide if a change in a paper is ‘relevant’ or ‘important’ enough to qualify a document as ‘different’ from another in this respect. Except for its Recommendations, which are only guidelines and not Rules, the Code is a set of Principles and Rules that must be followed, and Article 8.1 should be simply applied in all cases. As stated above, a single change of a single letter in a paper is enough to qualify the early document as unavailable. Such a minute change of one letter may have relevant, and sometimes important (e.g. regarding homonymy), consequences in zoological nomenclature when it concerns the spelling of a new name. The zootaxonomic literature is full of ill-formed names which their proper authors would certainly have wished to change after publication, for example after comments and criticisms by colleagues. If the possibility was open for authors to modify the ‘original spelling’ of an ill-formed name as appearing in an online preliminary version of a paper, the temptation would be great for some authors to do so, in the expectation or hope that, once this version has been retracted from the journal’s website, no one will remember or mention it. No need to say, such practices would be considerably detrimental to zoological nomenclature, as of course in many cases some taxonomists would have noticed the change, and problems and endless discussions would no doubt follow. To avoid this, a single and simple Rule must be followed in all cases: whenever the original version published ahead of print, and later retracted from the journal’s website, turns out to be different, even very slightly, from the final version that will remain on the website, or from the paper printed version if it exists, the original online document must be considered a preliminary version, devoid of nomenclatural availability, and the latter should shift to the final version, therefore at a later date. Of course, in order to be able to compare both versions, someone must have had access to both, which may not be the case for some works dealing with poorly studied groups, which may not have been downloaded during the ‘Early View’ period, so that a special responsibility here rests upon publishers, who should be aware of this problem.

There is no practical difference between Dubois et al.’ and Gentry et al.’s interpretations of the present case, as in both cases the lectotype designation is available, whether dated 2013 or 2014. But the situation may be different in other cases, whenever there exists a competition between two nomenclatural acts, names or spellings. The new Rules concerning the nomenclatural availability of ‘electronic publications’ introduced by the 2012 Amendment are quite precise and constraining. They were promulgated and published in order to allow distinction between any document that can be found on the web and a proper ‘electronic publication’. Contrary to the previous Rules concerning paper publications, they require recourse to external evidence, not present in the publication itself, which is quite problematic and unusual in zoological nomenclature. It is therefore important to clarify as soon as possible which interpretation respecting the Code should be adopted in such situations, in order to avoid subsequent repetitive misinterpretations and problems and the instauration of a chaotic situation in this domain, with

several competing interpretations being followed by different taxonomists, like in the present case.

We want to stress that there exist three very simple solutions to the problem discussed here, two of which apply even in journals which publish ‘ahead of print’ online versions of their papers.

The first one consists in publishing the online document and the paper-printed one exactly on the same date, and caring for the original online document not ever being modified subsequently. This was, for example, the practice of the journal *Zootaxa* until the end of 2012 and this is still the practice of its sister journal *Bionomina* (not ‘*Bionimina*’) – so that there exists in fact no ‘preview’ of the latter as stated by Gentry et al. (2014). This practice eliminates any possible subsequent discussion about the availability and publication date of a paper dealing with nomenclatural matters, as, irrespective of the Zoobank registration, the nomenclatural availability is provided by the paper version as it has been for 250 years.

The second solution applies to journals that have adopted the practice of ‘ahead of print’ online publication. It consists in using the exactly same document for the first online publication of the isolated paper and for its final publication as part of a Volume and issue, either simply online or both online and on paper. This course has already been followed by some taxonomic journals such as *Zootaxa* since the beginning of 2013: the paper version appears after the electronic one, but is exactly identical to it in content and layout. Of course, for this to be possible, the content, pagination and layout of each paper must be fixed from the start and not changed later. The order of the papers in each issue and the numbering of their pages must therefore be strictly chronological, following the order of acceptance, edition and distribution of the papers. We suggest that online journals which do or might, at least from time to time, publish papers having nomenclatural implications, should adopt such an editorial policy. Such journals could even agree to share a common ‘label’ to point to their respect of the latter. However, although this practice is quite easy for journals with flexible numbers of pages and articles per issue, it is difficult for journals having fixed number of pages per issue, for which pagination may remain provisional for months: such journals might consider the third solution suggested below.

The third practice would involve including in preliminary online early views of publications disclaimers following Article 8.2 and Recommendation 8G, stating that these previews are not published in the meaning of the Code. Such a practice would allow to identify with certainty the date when the editor considers the paper to be published with its final and permanent content and layout.

As discussed in detail by Dubois et al. (2013), the possibility now offered by the Code to publish new names and nomenclatural acts online raises many questions and is prone to create various problems in zoological nomenclature. We think that the new Rules introduced in the 2012 Amendment will have to be improved in several respects to solve these problems. We suggest that two guidelines should preside to the elaboration of these improvements. The first one would be to devise a system in which all the information relevant for ascertaining whether an online published work is nomenclaturally available should be found *within* the online document itself, without any need of recourse to *external* evidence. The second would be the formal recognition in the Code of the ‘*Principle of Nomenclatural Foundation*’ (Dubois, 2011, 2013) according to which, except in a very limited number of situations, the

nomenclatural status of a name or of a nomenclatural act is fixed once and for all in the original publication where it is introduced, and cannot be modified by the subsequent actions of individual zoologists, editors or publishers, but only by the Commission acting under its Plenary Powers. This should also apply to Zoobank entries for new names and nomenclatural acts, which should be exhaustive, registered before the publication itself and definitive (not be liable to be modified subsequently). This very sound ‘untold Principle’ has always in fact been respected ‘surreptitiously’ in all editions of the Code and should not be challenged because of the incorporation of online publications into the Code.

In conclusion, we propose the following formal definition of ‘*preliminary version*’, for inclusion in the Glossary of the Code:

‘*Preliminary version of a publication.* Any version of a work published online and which differs, even slightly (by even a single-letter or a single modified element of layout), in content and/or layout from the final version of the same work subsequently published online. A preliminary version is accessible online only during a limited period, before being definitively replaced by the final version, which then remains unchanged.’

Acknowledgements

For their comments on a preliminary version of this paper, we are grateful to Philippe Bouchet, Alessandro Minelli, Rohan Pethiyagoda, Zhi-Qiang Zhang and two anonymous reviewers.

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Appendix 1

Gentry et al. (2014) stated that Dubois et al. (2014) ‘have demonstrated misunderstanding or ignorance of a number of aspects [emphasized by us] of the International Code of Zoological Nomenclature’, but all aspects of their comments beside that discussed above are simply a matter of personal *opinions*, not of Code-compliance. It is the right of Gentry et al. (2014) to prefer having a type-specimen of uncertain origin rather than one coming with certainty from the island of Ceylon, but it is also the right of other authors to think differently. Even if today *Elephas maximus* is considered a monotypic species in many checklists, some authors recognize three subspecies, respectively in Sri Lanka, in mainland Asia and in Sumatra (Shoshani, 2005, p. 90), and the possibility cannot be discarded that future studies might result in their confirmation as valid taxa ‘or even in the recognition of several species’, which suggests that ‘it would be better to keep the *nomen maximus* attached to the Ceylonese taxon’ (Dubois et al., 2014, p. 53). This could have been done simply by the designation as virtual lectotype (i.e. a specimen referred to in the original description but not available anymore nowadays) for the taxon of a specimen of undisputable Ceylonese origin. Contrary to what Gentry et al. (2014) stated, the designation of a recent neotype, which they considered difficult because of the unavailability of specimens, is not indispensable today to stabilise the nomenclatural situation, as long as only one taxon of elephant is recognized, but would be required ‘if in the future the species *Elephas maximus* happened to be convincingly stated to consist of several subspecies or species.’ (Dubois et al., 2014, p. 57).

It is striking to note that there has been a change in the ‘certainty’ of the origin of the Florence specimen designated by Cappellini et al. (2014) as lectotype. Cappellini et al. (2014, p. 230) had written: ‘Thus, further resolution of the specimen’s geographical origin was not possible with current molecular data, but for nomenclatural stability, the type locality of *E. maximus* should continue to be understood to be the island of Ceylon (‘Zeylonae’ of Linnaeus, 1758).’ In contrast, Gentry et al. (2014, p. 3) wrote: ‘It is as certain as anything can be from the written records of the past that the elephant in the Natural History Museum of the University of Florence, now the *Elephas maximus* lectotype, came from Sri Lanka.’ The two sentences cannot be considered equivalent. Dubois et al. (2014) did not deny the likelihood that this specimen was an Asian elephant, they simply suggested that another specimen, cited in one of the works mentioned in Linnaeus’s (1758) original description, a work which was the only basis for the traditional recognition of Sri Lanka as the type locality of the species, would have been a better choice. They suggested a specimen which was of doubtless Ceylonese origin, even if it was a captive elephant, as in 1702 the king of Kandy would certainly not have brought it from the continent. Contrary to Gentry et al.’s (2014) suggestion that Recommendation 75A is so to say

‘compelling’, Recommendations of the Code are not Rules but simply guidelines that can be followed or not according to the situation, and some current Recommendations are indeed quite questionable (see e.g. Dubois, 2011, p. 47).

Contrary to the statement of Gentry et al. (2014), Dubois et al. (2014) did not ‘*set up their own system of three categories of syntype*’. They simply stated that it is fully Code-compliant to designate as lectotype of a nominal taxon a syntype which had not been examined personally by the author of the taxon and which is currently missing. The split of syntypes into primary, secondary and tertiary ones has only a didactic function and implies no intent of creating a ‘*new system*’. All these specimens are syntypes under the Code, but those listed as secondary or tertiary syntypes are often ignored by some modern taxonomists, although in some cases they represent better choices for a lectotype designation, in particular when they offer a more precise type-locality. Dubois et al. (2014) cited several examples in the literature to illustrate this point.

Beside a few other bitter comments which are irrelevant to this discussion (such as how to cite the Code or the use of a precise, technical terminology in zoological nomenclature, matters which have been discussed at length elsewhere), the only point on which Gentry et al. (2014) challenged Dubois et al.’s (2014) interpretation of the Rules (not Recommendations) of the Code is the availability of the 2013 PDF of Cappellini et al., and this deserves a serious discussion, provided above.

Note added in proofs

On 6 February 2015, we received from the Commission Secretariat the proofs of this paper, as well as the unpublished manuscript of Frank Krell which appears below in the same issue of this *Bulletin*. Therefore, whereas Krell had received our manuscript, as a referee, on 25 November 2014, before submitting his own, the reverse was not true and we could not discuss his manuscript in our paper. We disagree with Krell’s interpretations and proposals, and we stick to our analysis above. As time and space do not allow to do it in the present issue, we will submit a reply to Krell for publication in the BZN.

A mixed bag: when are early online publications available for nomenclatural purposes?

Frank-Thorsten Krell

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Abstract. The 2012 Amendment to the International Code of Zoological Nomenclature allowed electronic publication for nomenclatural purposes, but it neither explicitly dealt with electronic versions published or posted online before being integrated into a journal issue, nor did it define what a preliminary version is. This has resulted in controversy as to whether electronic ‘pre-publications’ are available for the purposes of zoological nomenclature. Here I propose a definition of ‘preliminary version’ in line with publishers’ NISO guidelines. The nomenclaturally relevant version is the *Version of Record* which is the final, immutable, published version. All versions of an article previous to the *Version of Record* are preliminary and not published for the purposes of zoological nomenclature. The immutability of the *Version of Record* refers only to content. Bibliographical metadata (volume, issue and page numbers) are not considered content; when those get added or changed with the inclusion of a document into a journal issue, the content of the document does not change, hence the version remains the same: the *Version of Record*. Following those guidelines, the *Version of Record* is available for nomenclatural purposes even if the page numbers later change. The online ‘pre-publication’ models of the major publishers are analysed as to which are available for zoological nomenclature. Electronic supplements should not contain nomenclaturally relevant information as they generally are neither immutable, nor permanent, nor published in the sense of the Code.

Keywords. Electronic publishing; nomenclature; preliminary version; scientific publishing; *Version of Record*.

In 2012, following an extended public debate, the International Commission on Zoological Nomenclature allowed electronic-only publication for nomenclatural purposes by means of an Amendment of the International Code on Zoological Nomenclature (ICZN, 2012). Since the Commission was dealing with a fundamentally different way of publishing, the Amendment could only be a first attempt to regulate this relatively unknown territory comprehensively; it is a test run to be refined for the next edition of the Code.

Unfortunately, the Amendment fails to explicitly deal with the status of works that are posted or published online before their inclusion in a journal issue. Almost all journals of all major publishers follow this publication model. With the overwhelming majority of journal usages having drifted to the electronic side (Williams et al., 2010; Duriez, 2013), readers treat electronic publications as available information, disregarding the formality of whether papers are included in journal issues or not.

The nomenclatural status of those ‘electronic pre-publications’ was discussed early on, particularly during a meeting with publishers in 2011 in London (Anonymous, 2011), but at the time the topic was considered not important enough to be specifically dealt with in the Amendment, and was neither mentioned in the report of that meeting, nor in a later statement of the Commission (ICZN, 2014). This omission has understandably led to uncertainties, irritation and confusion ever since (e.g. Dubois et al., 2013, 2015; Frost, 2014).

Requirements for availability of electronic publications for nomenclatural purposes

As determined by the Amendment to the Code (ICZN, 2012) and detailed by Krell (2013), the criteria for electronic publication for the purposes of zoological nomenclature are:

- (1) wide accessibility;
- (2) issued for the permanent scientific record (online posting for a limited time is not accepted);
- (3) fixed content and layout (e.g. a protected PDF file, not an editable Word file);
- (4) date of publication must be stated in the work itself (i.e. paper or book); a note on the journal’s webpage is not sufficient;
- (5) work (i.e. a paper or a book) must be registered in ZooBank, the Official Registry of Zoological Nomenclature (<http://zoobank.org>), and contain evidence that such registration took place (e.g. exact date of registration or/and registration number); registration of new animal names is not mandatory, but encouraged (Rosenberg et al., 2012);
- (6) ZooBank registration entry must give the name and internet address of an organization other than the publisher that is intended to permanently archive the work in a manner that preserves content and layout, and is capable of doing so (this does not need to be stated in the published work itself; such archives are currently Bioline International, Biotaxa, British Library online archive, CLOCKSS, Harvard Digital Repository Service, Hathitrust, LOCKSS, National Digital Heritage Archive of the National Library of New Zealand, Portico®, PubMedCentral®, Virginia State Publications Depository Program, and Zenodo);
- (7) ZooBank registration entry must contain the ISBN or ISSN of the work.

ZooBank registration alone is not sufficient to establish availability. Both available and unavailable names can be registered in ZooBank. Later on, they will be flagged as such, but currently they are not.

What is *not* available for nomenclatural purposes?

There is continuing ambiguity and controversy over the validity of nomenclatural acts published in online publications not yet included in a journal issue (often called ‘online pre-publications’). Confusion arises from the missing definition of the term ‘preliminary’ or ‘preliminary version’ in the Amendment as Dubois et al. (2015, in this issue) rightfully criticize.

The amended Code (ICZN, 2012) states:

Article 9. What does not constitute published work. . . . none of the following constitutes published work within the meaning of the Code: Article 9.9.

preliminary versions of works accessible electronically in advance of publication (see Article 21.8.3);

and

Article 21.8. Advance distribution of separates and preprints.

Article 21.8.3. Some works are accessible online in preliminary versions before the publication date of the final version. Such advance electronic access does not advance the date of publication of a work, as preliminary versions are not published (Article 9.9).

Given the bewildering variety of publishing models and policies publishers have established, recognizing an online version as ‘preliminary’ is not straightforward, particularly if ‘preliminary’ remains undefined. To define ‘preliminary’ in an applicable way that avoids misunderstandings and acknowledges current publication practices we need to consider the common guidelines most publishers follow. These are the NISO/ALPSP Recommendations.

NISO/ALPSP Recommendations, the ‘Code’ for professional publishers: What is the *Version of Record*?

The question of the status of electronic versions posted or published online before the publication of the accompanying paper version has been discussed by publishers for over a decade (Frankel et al., 2000; Carpenter, 2006). It was resolved in 2008 by the Journal Article Versions Technical Working Group of the National Information Standards Organization in partnership with the Association of Learned and Professional Society Publishers issuing *Recommendations on Journal Article Versions* (NISO/ALPSP Journal Article Versions (JAV) Technical Working Group, 2008; Morgan, 2008). These *Recommendations* are considered the ‘Code’ in the academic publishing world and define article versions at different stages of production: *Author’s Original*, *Submitted Manuscript Under Review*, *Accepted Manuscript*, *Proof*, *Version of Record*, *Corrected Version of Record*, and *Enhanced Version of Record*. For the purposes of zoological nomenclature, only the immutable, final version is relevant. All versions from *Author’s Original* to *Proof* are unavailable and considered unpublished. If they appear online, they are *posted*, not published.

What is the *Version of Record*? Is it the final version published online before integration into a journal issue, i.e. without final bibliographical details (final page numbering, volume and issue number)? Or is it the final version as soon as it is integrated into a journal issue and has received its final bibliographical details? The answer is: both! Both are one and the same version, the *Version of Record*. How can this be?

The NISO recommendations state clearly that bibliographical details, namely pagination (= page numbering) and volume/issue number, are not part of the *content* of a paper and do not change the version of an article. They are bibliographical metadata. With the integration of a final version into a journal issue, its content and layout stay the same; they are just presented in a different context. This *Version of Record* is archived, whereby it does not matter with which bibliographical details it is archived. If the content of the early electronic version is immutable, apart from

bibliographical metadata, then this early electronic version is the *Version of Record* following NISO/ALPSP Recommendations:

Version of Record

Definition: A fixed version of a journal article that has been made available by any organization that acts as a publisher by formally and exclusively declaring the article ‘published’. This includes any ‘early release’ article that is formally identified as being published even before the compilation of a volume issue and assignment of associated metadata, as long as it is citable via some permanent identifier(s). This does not include any ‘early release’ article that has not yet been ‘fixed’ by processes that are still to be applied, such as copy-editing, proof corrections, layout, and typesetting.

Notes:

- (1) Version of Record (VoR) is also known as the definitive, authorized, formal, or published version, although these terms may not be synonymous.
- (2) Many publishers today have adopted the practice of posting articles online prior to printing them and/or prior to compiling them in a particular issue. Some are evolving new ways to cite such articles. These ‘early release’ articles are usually AMs, Proofs, or VoRs. The fact that an ‘early release’ article may be used to establish precedence does not ipso facto make it a VoR. The assignment of a DOI does not ipso facto make it a VoR. It is a VoR if its content has been fixed by all formal publishing processes save those necessary to create a compiled issue and the publisher declares it to be formally published; it is a VoR even in the absence of traditional citation data added later when it is assembled within an issue and volume of a particular journal. As long as some permanent citation identifier(s) is provided, it is a publisher decision whether to declare the article formally published without issue assignment and pagination [here in the sense of page numbering – FTK], but once so declared, the VoR label applies. Publishers should take extra care to correctly label their ‘early release’ articles. The use of the term ‘posted’ rather than ‘published’ is recommended when the ‘early release’ article is not yet a VoR.

While differing page numbering is a short term problem for exact cataloguing – as long as the final page numbering has yet to be determined – it is not a problem for the Code, since pagination is not regulated. Pages or pagination are mentioned in only two Recommendations of the Code (Rec. 21E and Rec. 69A.10) and not in any mandatory part of the Code. Citations of page numbers are simply a finding aid. As long as journal issues are compiled, the preliminary page numbering exists for only a short time whereas the final page numbering persists in perpetuity. For practical reasons, I suggest to cite the final page numbers whenever available. The final pagination is the most practical finding aid.

Corrected Version of Record

While the *Version of Record* cannot be changed, it can be corrected to become a *Corrected Version of Record*, according to NISO recommendations. This is defined as:

A version of the *Version of Record* of a journal article in which errors in the VoR have been corrected. The errors may be author errors, publisher errors, or other processing errors.

NISO recommends:

It should contain a note to the effect that this version is based on the VoR and was altered by X on date Y, and provide a pointer to the Version of Record. Even in the case of a true Corrected [...] Version of Record, we recommend that the accompanying metadata specify who has made the update (with the default being the publisher), what was changed, and a link to the original Version of Record.

If these recommendations are followed, then the Corrected Version of Record is equivalent to a Corrigendum as allowed by the Code's Glossary (ICZN, 1999):

corrigendum (*pl. corrigenda*), *n.* A note published by an author, editor, or publisher of a work, expressly to cite one of more errors or omissions in that work together with their correction.

If publishers allow silently replacing the *Version of Record* by a *Corrected Version of Record* without marking it as such and without maintaining access to the original *Version of Record*, then the early electronic versions of such publishers are to be considered unavailable for the purposes of zoological nomenclature. Policing is difficult, but deliberately deceptive publishing policies are certainly very rare and not to be found with reputable publishers.

Recommendation for publishers

Works (articles, books) containing nomenclatural acts (species descriptions, replacement names, type designations, etc.) are semi-legal documents (Minelli, 2003) that cannot be changed. What might seem appropriate in 'normal' scientific papers (e.g. Mosley, 2011), namely by simply replacing the defective *Version of Record* by a *Corrected Version of Record*, is not admissible for nomenclaturally relevant works. The change has to be documented as required by the Code, Article 33.2. This corresponds to the NISO recommendations. If a *Corrected Version of Record* is issued, the original *Version of Record* needs to remain published, accessible, and archived. An alternative, probably preferable procedure would be issuing a *Corrigendum*. If this *Corrigendum* contains content required for availability of nomenclatural acts included in the original article, those acts should be available from the publication date of the *Corrigendum* (e.g. Langer et al., 2014).

Enhanced Version of Record

An *Enhanced Version of Record* is a version of record updated or enhanced by supplementary material. If the publisher applies the recommendations for *Corrected Versions of Record* to *Enhanced Versions of Record*, then the original *Version of Record* would be still available and would remain the nomenclaturally relevant document. The *Enhanced Version of Record* would be considered a new publication for the purposes of zoological nomenclature. If a publisher allows replacing *Versions of Record* by *Enhanced Versions of Record*, the electronic outlets (journals, serials) concerned would not be suitable for publishing nomenclatural acts.

Recommendation for publishers

Avoid *Enhanced Versions of Record* for taxonomic papers or any papers with possible nomenclaturally relevant content. If they seem necessary or desirable, maintain and archive the original *Version of Record* in parallel and clearly indicated.

Note on Retractions

Recently, a botanical paper describing a new species in the *Nordic Journal of Botany*, a Wiley journal, was retracted because the species turned out to be a synonym (Anonymous, 2014; Mattapha et al., 2013). While this particular case does not affect zoological nomenclature, the occurrence is of concern. Retracting a paper containing zoological nomenclatural acts would be ill-advised because the Code does not provide a mechanism to deal with a published paper that is supposed to no longer exist. As soon as it is published fulfilling all criteria for availability, a paper and the nomenclatural acts that it contains are available in perpetuity (unless later deemed to be unavailable by the ICZN's plenary power). To retract a paper containing nomenclatural acts a Case should be submitted to the Commission to apply its plenary power to declare those acts and the paper unavailable. However, there is no reason for retracting a publication on the grounds of a simple synonymy. This is an inappropriate over-reaction that causes confusion.

Practices of major publishers

The publication models of major publishers for early online releases are discussed below in terms of their availability for the purposes of zoological nomenclature. Publishers are invited to consult with the ICZN if they want to reinsure that their publication policies are or become Code-compliant.

BioMedCentral's Provisional PDFs – unavailable

It goes without saying that so-called Provisional PDFs of BMC journals are unavailable for nomenclatural purposes. They are PDFs created from accepted manuscripts, but are not formally typeset. Their layout will change and production errors can be corrected (<http://www.biomedcentral.com/authors/authorfaq/available>; accessed 2 Feb. 2015). They are considered to be 'posted' rather than 'published' in NISO terminology (NISO/ALPSP JAV Technical Working Group, 2008). Their posting date carries over to the *Version of Record* and is stated after 'Published:' or 'Published online:' near the end of the article before the References section in this final version. Note that this is not the publication date of the *Version of Record* and is irrelevant for nomenclatural purposes. The publication date of the final version is not revealed beyond the year (in the header, to be precise). As they are lacking specific information on the publication date of such available articles, all of them, by default, need to be dated 31 December of the year in which they were published unless additional information proves an earlier publication date. Article 21.3. of the Code (ICZN, 1999) determines:

Date incompletely specified. If the day of publication is not specified in a work, the earliest day on which the work is demonstrated to be in existence as a published work is to be adopted as the date of publication, but in the absence of such evidence the date to be adopted is

21.3.1. the last day of the month, when month and year, but not day, are specified or demonstrated, or

21.3.2. the last day of the year when only the year is specified or demonstrated.

I had stressed earlier (Krell, 2013) that publishers need to state the publication date of the final version (*Version of Record*) in the publication, not a posting date of a previous version. BioMedCentral is aware of the problem and has put a solution in place: All taxonomic manuscripts will only be published in ‘final version’ from January 2015 (Elizabeth Moylan, Senior Editor Research Integrity, pers. comm., Jan. 2015), hence from 2015 the stated publication date is the priority-relevant date of the *Version of Record* in taxonomic papers published by BioMedCentral.

Brill’s Advance Articles – available

Brill’s webpage does not reveal whether their Advance Articles are immutable or can still be changed (<http://www.brill.com/products/journals/advance-article-publication>, accessed 2 Feb. 2015), but I received confirmation from the publisher that all Advance Articles are the *Version of Record* (Michiel Thijssen, Senior Acquisitions Editor, Biology and History of Science, Brill, pers. comm. Dec. 2014/Jan. 2015), the content of which cannot be changed. All changes to the content of *Versions of Record* will be published as Errata or Corrigenda. Brill’s Advance Articles are available for the purposes of zoological nomenclature.

Cambridge University Press’s FirstView – available

Cambridge publishes articles ‘as soon as they are ready for publication’ as FirstView articles in advance of journal issue compilation. From Cambridge’s webpages it is unclear whether those FirstView articles are final and immutable (<http://journals.cambridge.org/action/help?pageId=1768>, accessed 2 Feb. 2015), but I received confirmation from the publisher that such articles are the immutable *Version of Record* (Anne Harvey, Publishing Editor, STM Journals at Cambridge University Press, pers. comm. Dec. 2014). Cambridge’s FirstView articles are available for the purposes of zoological nomenclature. I also received confirmation that Cambridge journals containing nomenclaturally relevant content will not post ‘Accepted Manuscripts’ (i.e. provisional versions before copy editing and proofing).

Elsevier’s Articles in Press – unavailable

Elsevier states that ‘Articles in Press are accepted, peer reviewed articles that are not yet assigned to an [sic] volumes/issues, but are citable using DOI’. Articles in Press can be ‘accepted manuscripts,’ ‘uncorrected proofs,’ or ‘corrected proofs.’ It is obvious that the first two categories are unavailable for nomenclatural purposes for their content can easily change. Corrected Proofs are ‘articles that contain the authors’ corrections. Final citation details, e.g. volume and/or issue number, publication year and page numbers, still need to be added *and the text might change before final publication*’ [emphasis mine; text from the webpage of *Zoologischer Anzeiger* at <http://www.sciencedirect.com/science/journal/aip/00445231#FCANote>, accessed 2 Feb. 2015, being identical for all Elsevier journals I checked]. In my own experience, this change can include potentially nomenclaturally relevant information.

I recently requested the addition of my institution to be mentioned as a repository in corrected proofs of a paper of a colleague and succeeded. The paper did not contain nomenclatural acts, but serves as an example for Elsevier's publication policies. Since corrected proofs in Elsevier journals are not immutable, they are not to be considered the *Version of Record* and are unavailable for nomenclatural purposes. Therefore, the online publication date is irrelevant for nomenclatural purposes. Note: In the *Version of Record* of Elsevier articles, only the online publication date is stated, but not the exact publication date of the *Version of Record* beyond the year ('The date an article was first made available online will be carried over'). As they are lacking specific information on the publication date of such available articles, all of them, by default, need to be dated 31 December of the year in which they were published unless additional information proves an earlier publication date (Code Article 21.3.).

Oxford University Press's Advance Access – unavailable

Oxford Journals publish under their Advance Access scheme accepted manuscripts and corrected proofs. Articles of the first category will change in content and layout and are unavailable for nomenclatural purposes. From Oxford's webpages, it is unclear whether the corrected proofs are immutable or can still be changed (<http://sysbio.oxfordjournals.org/papfaq>; accessed 2 Feb. 2015), but I received confirmation from the publisher that content of Advance Access versions can be corrected. While this is the exception, grievous errors can be rectified (Adrianne Loggins, Senior Production Editor, Oxford Journals, pers. comm. Dec. 2014). Such corrections can include nomenclaturally relevant information. Therefore Advance Access articles are unavailable for the purposes of zoological nomenclature. As soon as articles are published in an issue, they are immutable and become the *Version of Record*. Nomenclatural availability is established by the version included in a journal issue.

Pensoft journals' electronic version – available

Pensoft publishes *ZooKeys* and a still small, but increasing number of nomenclaturally relevant journals. Next to *Zootaxa*, *ZooKeys* is one of the journals publishing the most new taxon names in zoology (Erwin et al., 2012). Originally *ZooKeys* had published identical electronic and hardcopy versions simultaneously ('on the same date', <http://www.pensoft.net/journals/zookeys/about/Editorial%20Policies#Editorial%20Policies>, accessed 2 February 2015). With the ratification of the Amendment, this practice is now changing: *ZooKeys* occasionally published electronic versions in advance to paper publication and will increasingly do so. Pensoft's other journals also publish electronic versions first. These electronic versions are always final and immutable (*Version of Record*) (Lyubomir Penev, pers. comm. Feb. 2014), hence available for the purposes of zoological nomenclature.

Springer's Online First – available

Springer does not publish articles before the proofs are corrected and finalized: 'Once the initial proof has been corrected and finalized, the article is ready for Online First publication. The article will be forwarded for online publication on SpringerLink in a week's time after the receipt of corrections. Please note: *After the article's online*

publication on SpringerLink, no corrections (including the order of the authors' names) can be made. Changes can only be made in the form of an Erratum, which will be hyperlinked to the article' (emphasis mine; text from Springer Helpdesk at <http://www.springer.com/authors/journal+authors/helpdesk?SGWID=0-1723213-12-817311-0>, accessed 2 Feb. 2015). Since Springer disallows corrections after Online First publication, Online First papers are the *Version of Record* and are available for nomenclatural purposes.

Taylor & Francis's 'Latest articles' – available, apart from 'Accepted Manuscripts Online'

Taylor & Francis generally publish corrected and finalized proofs as their 'Latest articles'. 'For most journals, accepted articles are copy-edited, typeset, proofed, and corrected, creating the VoR. The VoR is then published online in the journal's 'Latest articles' list' (<http://journalauthors.tandf.co.uk/publication/rapidonlinepublication.asp>, accessed 2 Feb. 2015). 'An article published by a Taylor & Francis journal constitutes the Version of Scholarly Record, the final, definitive, and citable version, and includes: (a) the accepted manuscript in its final form, including the abstract, text, bibliography, and all accompanying tables, illustrations, data; and (b) any supplemental material. We frequently publish Version of Scholarly Record articles in electronic form ahead of allocation to a given issue. It is our policy (in common with other publishers) not to amend or alter this published Version of Scholarly Record. [...] We publish corrections to the Version of Scholarly Record as errata or corrigenda [...] if there is a serious error, for example with regard to scientific accuracy, or if your reputation or that of the journal would be affected.' Since Taylor & Francis do not allow change to the content of the *Version of Record*, such 'Latest articles' are available for nomenclatural purposes.

Only selected journals of this publisher offer 'the Accepted Manuscript Online (AM) feature, whereby the final, accepted (but unedited and uncorrected) manuscript is posted online [...]. The posted file is clearly identified as an unedited manuscript that has been accepted for publication. Copy-editing, typesetting, and review of the resulting proof are then undertaken on this manuscript before final publication of the Version of Scholarly Record (VoR)' (<http://journalauthors.tandf.co.uk/publication/rapidonlinepublication.asp>, accessed 2 February 2015). Such manuscripts are not available for nomenclatural purposes. Since they are 'clearly identified as an unedited manuscript', the Accepted Manuscript Online feature should not cause any confusion.

Wiley's Early View – available

Wiley publishes papers after their proofs were corrected and finalized. It is true that the publisher's webpage is silent as to whether such papers can be changed (<http://olabout.wiley.com/WileyCDA/Section/id-404512.html#ev>, accessed 2 Feb. 2015), but we have recently clarified in an Opinion article for the Wiley journal *Systematic Entomology* (Cranston et al., 2015), that the content of Early View articles is immutable. Such articles are the *Version of Record*. Any changes to content of this version are dealt with by errata or corrigenda. Wiley makes an effort to add explicit notes such as '[Version of Record, published online day month year]' to papers with nomenclaturally relevant content, although this is not done in every such paper.

When the article is integrated into a journal issue, this text changes to ‘First published online day month year.’ Wiley Early View papers are the *Version of Record* with immutable content and are available for nomenclatural purposes.

Some Wiley journals, such as the *Journal of Animal Ecology*, post ‘Accepted Articles’ with the disclaimer ‘This article has been accepted for publication and undergone full peer review but has not been through the copyediting, typesetting, pagination and proofreading process, which may lead to differences between this version and the Version of Record.’ (e.g., <http://onlinelibrary.wiley.com/doi/10.1111/1365-2656.12347/abstract>; accessed 2 Feb. 2015; with publication of the *Version of Record* the disclaimer will disappear). Accepted Articles are not immutable, hence unavailable for the purposes of zoological nomenclature.

Zootaxa electronic version – available

Zootaxa, a mega-journal that publishes about a quarter of all new zoological names, had originally issued the electronic and paper versions of an article concurrently (Zhang, 2006). With the ratification of the Amendment (ICZN, 2012), the journal has changed this practice for economic reasons. Now, with the ratification of the Amendment, the electronic version can be published earlier than the paper version and is the nomenclaturally relevant version, being fully Code-compliant as explained by Zhang (2014). Print and electronic versions are produced from the same PDFs. The publication date given in either version is the date of online publication as this is the date of the first edition that is Code-compliant (Zhang, in litt. 2014).

The problem of electronic supplements

With abandoning paper, journals might decide to integrate supplementary material into the main article. However, some purely electronic journals, such as the new *Royal Society Open Science*, decided to accommodate electronic supplements that are not part of the main work. Electronic supplements are generally not subject to the same mechanisms of maintenance and archiving as the main articles. They come in all sorts of file formats which will not get migrated if software changes and are generally not archived at all. Authors and editors should avoid including nomenclaturally relevant information in electronic supplements. Electronic supplements are to be considered unavailable for the purposes of zoological nomenclature.

Nevertheless, editors let mandatory nomenclatural information slip out of the *Version of Record* of the paper and into electronic supplements. A recent example is the paper by Al Kathib et al. (2014) in *Systematic Entomology* including the description of eleven new species. Although Article 16.4.2 (ICZN, 1999) requires a statement of ‘name and location’ of the repository of the holotype, only the codens of the repositories are given in the paper. The holotypes of eight new species are in MNHG, two in NHRS, and one in AICF. While some might know what these codens mean, it is debatable if unresolved codens fulfil the requirements of Article 16.4.2. The explanation of the codens is posted as an electronic supplement. To save about 15 printed lines in an article of 57 printed pages, the journal has risked the availability of eleven new species names. This case is still unresolved. Another case occurred in the electronic-only journal *Royal Society Open Science*: A description of a new dinosaur (Langer et al., 2014a) lacked several mandatory components, including name and location of the repository of the holotype which also was to be found in an

electronic supplement. This case was resolved by the publication of an Addendum (Langer et al., 2014b), being a ‘corrigendum’ in the sense of the Glossary of the Code, containing the missing information and making the name available with the effective date of publication of this corrigendum.

Electronic supplements can easily cause problems for taxonomic papers and should be avoided or at least be checked for contents relating to any nomenclatural acts proposed in the paper.

Recommendation for publishers

In purely electronic publications, avoid electronic supplements. Make them supplements included in the work itself so that they become part of the *Version of Record* and enjoy the same permanency through archiving. Journals with a print version, which might consider electronic supplements necessary, are advised not to include any Code-regulated information in those supplements.

The current problems will largely go away, but not overnight

With increasing dominance of online publishing over paper in terms of distribution and usage, it becomes less important to compile articles into issues and volumes. In fact, ever more journals are transitioning to a different publishing model called article-based publishing (Elsevier; <http://www.elsevier.com/journal-authors/article-based-publishing>), continuous article publishing (Springer, e.g. Thatje, 2014), rolling volumes (Cirasella & Bowdoin, 2013) or just continuous publication (Duriez, 2013). Under this model, the *Version of Record* of articles will be published as soon as it is produced and fixed, i.e. typeset and corrected. In general each article has its own pagination and an article number that is commonly cited instead of the pagination (Öchsner 2013: 69). This provides the opportunity to use the final citation of an article from the start (Anderton & Harvey, 2013). No page numbers need to change, no issue and volume numbers need to be added later. Issue numbers and continuous volume pagination seem to be a phase-out model, but will not go away overnight, and might be maintained by a minority of journals for the foreseeable future. Therefore, it is important to clarify the status of early online publications.

While I would suggest following the publishers’ ‘Code’ in defining what a preliminary version and the version of record are, only a Declaration of the Commission or the inclusion in the next Code’s Glossary can make this definition mandatory.

I propose the following formal definition of ‘preliminary version’, ‘Version of Record’, and ‘content of a publication’, for inclusion in the Glossary of the Code’:

Preliminary version of a publication. Any version of a publication that precedes the fixed *Version of Record* in the publication process. Preliminary versions are unavailable for nomenclatural purposes.

Version of Record. The final version of a publication that has immutable content and layout and will be archived (this excludes electronic supplements that are not part of the archived work itself). Bibliographical details, such as page numbering, issue and volume number, of a *Version of Record* can change or be added, e.g. if it gets included into a journal issue after publication.

Content of a publication. All components of a scientific paper (e.g. text, visuals) apart from bibliographic metadata (volume number, issue number, page numbering).

I strongly advise against adopting Dubois et al.'s (2015) proposed definition of the 'preliminary version of a publication' which does not distinguish between content and bibliographical metadata. It requires that 'even [the change of] a single-letter of a single modified element of layout' makes the *Version of Record* a preliminary version, hence unavailable for the purposes of zoological nomenclature. This definition, if applied to bibliographical metadata, does not fit into current publication models and would result in taxonomic papers being delayed until the publication of a print version, rendering journals with a print version less attractive as outlets for taxonomic research. This unpleasant scenario is entirely unnecessary and easy to avoid. By following the publishers' 'Code', namely the NISO guidelines, we can smoothly adapt to the world of electronic publishing.

Epilogue: Liberality suggested

Electronic publications as an available medium for zoological nomenclature are new and fast developing. Authors, publishers and the zoological Code will need some time to learn and adapt to the new and still rapidly evolving situation. We are currently in a transitional period, moving towards better adapted and functioning rules in the next edition of the Code. In this transitional period, we should interpret the existing rules rather pragmatically and liberally. While we should not allow deliberate neglect of sensible mandatory regulations, we should not interpret the Code and the Amendment in such a way that minor honest mistakes become blown up to major problems or that cannot be corrected in a sensible way.

Acknowledgements

Early in the discussion, Debbie Wright (*formerly of Wiley-Blackwell*) pointed out the relevance of the NISO Recommendation. Elizabeth Moylan (*BMC, London, U.K.*), Jennifer Boyd and Adrienne Loggins (*Oxford Journals, Oxford, U.K. and Cary, NC, U.S.A.*), Anne Harvey (*Cambridge University Press, Cambridge, U.K.*), Michiel Thijssen (*Brill, Leiden, The Netherlands*), Lyubomir Penev (*Pensoft Publishers, Sofia, Bulgaria*) and Zhi-Qiang Zhang (*Chief Editor and founder of Zootaxa*) helped to clarify their respective publishing policies. I am deeply indebted to Alain Dubois (*Muséum national d'histoire naturelle, Paris*) for his permission to refer to his at the time unpublished manuscript (Dubois, 2015) while he did not have the same opportunity with my paper as I completed it too late for his consideration. Reviews by David Bettman (*Denver Museum of Nature & Science*), Thomas Pape (*Natural History Museum of Denmark, Copenhagen*), Miguel Alonso-Zarazaga (*Museo Nacional de Ciencias Naturales, Madrid, Spain*) and by an anonymous referee greatly improved this paper.

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Case 3674***Collohmanna* Sellnick, 1922 (Arachnida, Acari, Oribatida): proposed conservation by giving it precedence over the senior subjective synonym *Embolacarus* Sellnick, 1919**

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the widely used oribatid mite genus name *Collohmanna* Sellnick, 1922, which is threatened by the obscure senior subjective synonym *Embolacarus* Sellnick, 1919. The latter is based on a single fossil species whose type and only known specimen is lost; most subsequent literature citations are simple, unenhanced listings. By contrast, *Collohmanna* has been used in a significant body of literature relating to morphology, reproductive biology, development, behavior, chemical ecology and phylogeny, as well as appearing in molecular databases. It is proposed that *Collohmanna* be given precedence over *Embolacarus* whenever they are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Acari; Oribatida; COLLOHMANNIIDAE; *Collohmanna*, *Embolacarus*; oribatid mite; moss mite; Baltic amber fossil.

1. The oribatid mite genus *Embolacarus* Sellnick, 1919 (p. 39) was proposed with *E. pergratus* Sellnick, 1919 (p. 39) as type species (by monotypy), on the basis of a single Baltic amber fossil. The latter is presumed lost following World War II, along with other types from that publication and the main part of the amber collection of Königsberg University (E.E. Ezhova, pers. comm., 2010; see also Ezhova, 1995; Sidorchuk & Norton, 2010). No specific family association was proposed in the original publication, *Embolacarus* has remained monotypic, and no further specimen has been reported in the literature (but see below). We have thoroughly examined the literature for usage of the name: Vitzthum (1931) assigned the genus to NEOLIODIDAE without comment (and subsequently expressed doubt in 1942, without explanation), and Dubinin (1962) reproduced Sellnick's (1919) original illustration of *E. pergratus*, listing the genus without comment. All other published citations of *Embolacarus* between its proposal and 2006 (see below) have been in secondary literature as bare, unelaborated listings in catalogues and other compilations (Radford, 1950; Baker & Wharton, 1952; Petrunkevitch, 1955; Keilbach, 1982; Krivolutsky et al., 1990; Fujikawa, 1991; Labandeira et al., 1997).

2. The extant oribatid mite genus *Collohmanna* Sellnick, 1922 (p. 18) was proposed with *C. gigantea* Sellnick, 1922 (p. 18) as type species by monotypy. A second species, *C. nova* Sellnick, 1932 (p. 704), was shown by Schuster (1962) to represent the male of the dimorphic *C. gigantea*, its senior subjective synonym. Three subsequent *Collohmanna* species were proposed: *C. asiatica* Krivolutsky & Christov, 1970 (in Christov, 1970), *C. schusteri* Norton, 2006 and *C. johnstoni* Norton & Sidorchuk, 2014, which are respectively extant, fossil (Baltic amber) and extant, such that *Collohmanna* currently includes four nominal species. No family association was proposed by Sellnick (1922), but subsequently the genus was included in several families by different authors (reviewed by Norton & Sidorchuk, 2014) before being used as type genus for the monogeneric family COLLOHMANNIIDAE Grandjean, 1958 (p. 118).

3. Norton (2006) identified probable inaccuracies in Sellnick's (1919) original description and illustration of *Embolacarus pergratus* and proposed its transfer to COLLOHMANNIIDAE. He discussed the possible synonymy of *Embolacarus* and *Collohmanna*, but postponed judgment until the species was rediscovered. One of us (EAS) recently found such a specimen in a private collection of Baltic amber in Hamburg (Thomas Weiterschan coll. #1710) and preliminary examination tentatively confirmed Norton's suspicions. We are in the process of writing a review of COLLOHMANNIIDAE that includes a redescription of *C. asiatica* and the proposal of several new species, both extant and fossil; in this work we also will redescribe *Embolacarus pergratus* and designate a neotype, and formally propose the synonymy of *Collohmanna* and *Embolacarus*. We will maintain usage of *Collohmanna* and explain our appeal to the Commission to reverse the precedence of the names, based on degree of usage.

4. Whereas *Embolacarus* appeared only in secondary literature listings after its original proposal (see above), research publications covering a wide spectrum of non-taxonomic topics have used the name *Collohmanna*: (a) Under this name the genus has been considered a primary candidate for sister-taxon of a major evolutionary radiation of oribatid mites, the hyporder Ptyctima (Štorkán, 1925; Grandjean, 1966, 1969; Travé, 1975; Norton & Sidorchuk, 2014). (b) Morphological and methodological studies using this name have demonstrated rarities including strong sexual dimorphism, atypical male genitalia, multiplicity of dermal glands with implications for the evolution of gland-seta associations, and numerous other unusual traits (Sellnick, 1932; Grandjean, 1934, 1966 and scattered details in many other papers as indicated by van der Hammen, 1976; Woodring, 1970; Alberti et al., 1994; Walzl, 1991; Alberti & Schuster, 2005; Norton & Sidorchuk, 2014). (c) Histological and ultrastructural studies using this name have revealed detailed aspects of digestive, excretory and reproductive organs, as well as spermatogenesis (Hoebel-Mävers, 1967; Woodring, 1973; Alberti & Schuster, 2005). (d) Developmental studies using this name have analysed ontogenetic transformations, including intricate patterns of setal additions (Grandjean, 1966; Pfingstl et al., 2005; Norton & Ermilov, 2014; Norton & Sidorchuk, 2014). (e) Under this name *C. gigantea* was shown to be an experimental intermediate host for tapeworms (Ebermann, 1979). (f) Ethological studies using this name have demonstrated behavioral rarities among oribatid mites, including associative courtship and the use of self-produced nuptial food by males to entice females (Schuster, 1962; Grandjean, 1966; Alberti & Schuster,

2005; Behan-Pelletier & Eamer, 2010; Norton & Sidorchuk, 2014). (g) The type species, *C. gigantea*, is the first oribatid mite whose chemical ecology was studied. Its opisthonotal glands produce a wide variety of organic compounds that serve several defensive functions against predators and other antagonistic organisms, and it has been a model for similar studies of other oribatid mite species (Rasputnig, 2006; Rasputnig et al., 2001, 2003, 2004; Rasputnig & Foettinger, 2008). Also, it is among the few oribatid mites whose cuticular fatty acids have been studied (Rasputnig & Krisper, 1998). (h) All relevant molecular data available in Genbank are under the name *Collohmanna*, including those derived from studies of oribatid mite phylogeny and convergence in morphological defensive structures (Lee et al., 2006; Dabert et al., 2010; Pachl et al., 2012).

5. The name *Collohmanna* is also applied throughout the relevant taxonomic literature. It was used in the proposal of four species subsequent to 1922 and it appears in all taxonomic checklists, catalogues, monographs and other compilations published since 1922 that have pertinent geographical coverage of extant oribatid mites. Important examples include: Vitzthum (1931, 1942); Grandjean (1954, 1969); Tarman (1958, 1970, 1983); Schuster (1960, 1965); Sellnick (1960); Balogh (1961, 1963, 1965, 1972); Mihelčič (1965); Kunst (1971); Krivolutsky & Tarba (1972); Bulanova-Zachvatkina (1975); Mahunka (1977); Hammer & Wallwork (1979); Balogh & Mahunka (1983); Schatz (1983); Karppinen et al. (1986, 1987, 1992); Marshall et al. (1987); Fujikawa (1991); Balogh & Balogh (1992); Flogaitis, (1992); Vasiliu et al. (1993); Sergienko (1994); Krivolutsky et al. (1995); Murvanidze & Daredzhanashvili (2000); Starý (2000); Shtanchaeva (2001); Ryabinin & Pan'kov (2002); Woas (2002); Mahunka & Mahunka-Papp (2004); Subías (2004); Weigmann (2006); Melamud (2008); Norton & Behan-Pelletier (2009); Schatz & Schuster (2009); Shtanchaeva & Subías (2010); Subías et al. (2012); Lebedeva & Poltavskaya (2013) and Mahunka et al. (2013).

6. Further, the name *Collohmanna* has been used in many secondary citations of the papers indicated in paras. 4 and 5 (above). We do not attempt to list these here, other than to note that the name was used in all the relevant general texts on acarology (e.g. Baker & Wharton, 1952; Krantz, 1978; Evans, 1992; Alberti & Coons, 1999; Walter & Proctor, 1999, 2013; Krantz & Walter, 2009). As they have no significant economic or health importance, oribatid mites in general are little cited in the literature, but, relative to *Embolacarus*, the use of *Collohmanna* is much greater in both topical and quantitative senses.

7. Based on the Principle of Priority (Article 23.1), *Embolacarus* Sellnick, 1919 would be a senior subjective synonym of *Collohmanna* Sellnick, 1922. While the former is poorly known and little used, its continued appearance in checklists and catalogues, particularly ones listing fossil mites, precludes our application of Article 23.9.1.1. Therefore, in the interest of nomenclatural stability, we request that the Commission uses its plenary power to apply Article 23.9.3, reversing the precedence of *Embolacarus* and *Collohmanna* and thereby allowing conservation of the much better-known name by the same author when the names are considered synonyms.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to give the generic name *Collohmanna* Sellnick, 1922 precedence over *Embolacarus* Sellnick, 1919, whenever the two names are considered to be synonyms;

- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Collohmanna* Sellnick, 1922 (gender: feminine), type species by monotypy *Collohmanna gigantea* Sellnick, 1922, with the endorsement that it is to be given precedence over *Embolacarus* Sellnick, 1919, whenever they are considered to be synonyms, as ruled in (1) above;
 - (b) *Embolacarus* Sellnick, 1919 (gender: masculine), type species by monotypy *Embolacarus pergratus* Sellnick, 1919, with the endorsement that it is not to be given priority over *Collohmanna* Sellnick, 1922, whenever they are considered to be synonyms, as ruled in (1) above;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *gigantea* Sellnick, 1922, as published in the binomen *Collohmanna gigantea* (specific name of the type species of *Collohmanna* Sellnick, 1919).
 - (b) *pergratus* Sellnick, 1919, as published in the binomen *Embolacarus pergratus* (specific name of the type species of *Embolacarus* Sellnick, 1919).

Acknowledgements

We are thankful for the expert guidance of Commissioner Dr. Bruce Halliday during the preparation of this application.

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Acknowledgement of receipt of this application was published in BZN 72: 1.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3673***Geophilus alpinus* Meinert, 1870 (Chilopoda): proposed conservation of the specific name**

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the specific name *Geophilus alpinus* Meinert, 1870 for a widespread European species of geophilomorph centipedes. This name, currently in use, is threatened by the subjective synonyms *Geophilus impressus* C.L. Koch, 1847 and *Geophilus palustris* C.L. Koch, 1863, which have been disregarded since 1874 and 1882 respectively.

Keywords. Nomenclature; taxonomy; Chilopoda; *Geophilus*; *Geophilus alpinus*; *Geophilus impressus*; *Geophilus palustris*; geophilomorph centipedes.

1. C.L. Koch (1847, p. 187) described *Geophilus impressus* based upon a single specimen from near Pula, Croatia, but the original description was so poor that the true identity of the species remained uncertain to all subsequent authors. As a consequence, no other specimen was assigned to *G. impressus*. Meinert (1870, p. 82), followed by Latzel (1880), considered *G. impressus* as a synonym of *Geophilus proximus* C.L. Koch, 1847, but this was based on an incorrect concept of *G. proximus* that actually corresponds to *G. alpinus* Meinert, 1870 (Bonato & Minelli, 2014). After its original description, *G. impressus* was cited only rarely as valid (to the best of our knowledge, in another 6 papers). After Fanzago (1874), it was registered only as the potentially valid name of a species of uncertain identity in a few monographs (Attems, 1929), checklists (Kos, 1992, 1996; Stoev, 1997) and electronic databases (Minelli & Foddai, 2007).

2. In a later work, C.L. Koch (1863, p. 71) described also *Geophilus palustris*, based upon specimens from near Regensburg, Germany, and also in this case the original description was too vague to allow an easy assessment of the true identity of the species (e.g. Porat, 1889; Minelli, 1992; Jeekel, 1999). Only Palmberg (1866), Fanzago (1876, 1882) and Fedrizzi (1876) identified other specimens as *G. palustris*. Instead, since Stuxberg (1871, p. 509), *G. palustris* was most often considered as a synonym of *G. proximus*, but this was based on an incorrect concept of *G. proximus* as in the case of *G. impressus*. Likewise, after its original description, *G. palustris* was cited only rarely as valid (to the best of our knowledge, in another 6 papers) and, after Fanzago (1882), only as the potentially valid name of a species of uncertain identity (Attems, 1929).

3. Meinert (1870, p. 76) described *Geophilus alpinus* based upon specimens from two localities, Bagni di Razzes in Italy and Tübingen in Germany, but the original description was not sufficient to identify the species confidently. Since Latzel (1880,

p. 184), most authors considered *G. alpinus* to be a junior synonym of *G. proximus* (following a concept of the latter nominal species different from the current one, as explained above), whereas others cited it merely as a species of uncertain identity (Folkmanová, 1928; Attems, 1929; Jeekel, 1999). Only recently, Spelda (2006) demonstrated definitively that *G. alpinus* is the correct name for the species that had been traditionally known as *G. insculptus* Attems, 1895 (described in Attems, 1895, p. 163). Since then, most authors have adopted *G. alpinus* as the valid name for this species (Bonato & Minelli, 2014) and up to now it has been used as valid by another 15 authors in another 23 papers (e.g. Dányi, 2008, 2009, 2010; Bonato & Minelli, 2009, 2011, 2014; Leśniewska et al., 2009; Reip & Voigtländer, 2009; Minelli et al., 2010; Minelli & Zapparoli, 2011; Voigtländer et al., 2011; Zapparoli & Iorio, 2012; Chipman et al., 2013; Simaiakis et al., 2013).

4. Recently, we provided arguments for recognizing both *G. impressus* and *G. palustris* confidently as synonyms of *G. alpinus* (Bonato & Minelli, 2014). However, despite the fact that both *G. impressus* and *G. palustris* are senior synonyms of *G. alpinus*, we think that resurrecting one of these names would not serve nomenclatural universality and stability because both remained practically unused since 1882, whereas *G. alpinus* is currently in use as the valid name for this species. However, the two conditions for the reversal of precedence (Article 23.9.1 of the Code) are not fully met: both *G. impressus* and *G. palustris* have been used as valid also after 1899 (Article 23.9.1.1), although merely for a species of uncertain identity; additionally, *G. alpinus* does not satisfy Article 23.9.1.2 of the Code, although it has been used in at least 23 works by more than 15 authors between 1999 and now. To maintain stability, we advocate the conservation of *G. alpinus* over both *G. impressus* and *G. palustris*.

5. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the following specific names for the purposes of the Principle of Priority but not for those of the Principle of Homonymy:
 - (a) *impressus* C.L. Koch, 1847, as published in the binomen *Geophilus impressus*;
 - (b) *palustris* C.L. Koch, 1863, as published in the binomen *Geophilus palustris*;
- (2) to place on the Official List of Specific Names in Zoology the name *alpinus* Meinert, 1870, as published in the binomen *Geophilus alpinus*;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the following names:
 - (a) *impressus* C.L. Koch, 1847, as published in the binomen *Geophilus impressus* and as suppressed in (1)(a) above;
 - (b) *palustris* C.L. Koch, 1863, as published in the binomen *Geophilus palustris* and as suppressed in (1)(b) above.

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Acknowledgement of receipt of this application was published in BZN 72: 1.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3672***Anolis chlorocyanus* Duméril & Bibron, 1837 and *Anolis coelestinus* Cope, 1862 (Reptilia, Squamata): proposed conservation of the specific names and designation of a neotype for *A. chlorocyanus***

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Abstract. The purpose of this application, under Article 75.6 of the Code, is to conserve the specific names of *Anolis chlorocyanus* Duméril & Bibron, 1837 and *Anolis coelestinus* Cope, 1862 in their accustomed usages. The syntypes of the former species are conspecific with the only available syntype of the latter; however, for about 85 years the name *A. coelestinus* has been applied to the species represented by these types. For the same period of time the name *A. chlorocyanus* has been consistently applied to another equally well-known taxonomic species. It is proposed that the Commission use its plenary power to set aside the type status of the syntypes of *A. chlorocyanus* in order to stabilize the current and long-established usage of the names *A. chlorocyanus* and *A. coelestinus*. It is further proposed that the specimen SMF 97845 be designated as the neotype of *A. chlorocyanus* Duméril & Bibron 1837. SMF 97845 is an adult male from El Limón, Province Samaná, Dominican Republic, that represents the taxonomic species traditionally referred to as *A. chlorocyanus*.

Keywords. Nomenclature; taxonomy; Reptilia; Squamata; DACTYLOIDAE; *Anolis*; *Anolis chlorocyanus*; *Anolis coelestinus*; Hispaniolan green anoles; Greater Antilles; Hispaniola.

1. Duméril & Bibron (1837, p. 117) described *Anolis chlorocyanus* (as *Anolis chlorocyanus*) based on six syntypes, MNHN 785, 787, 2007.2066–09, in the Muséum National d'Histoire Naturelle, Paris, from 'Martinique and St.-Domingue'. As pointed out by Mertens (1939, p. 63), this species does not occur on the island of Martinique, and 'St.-Domingue' at that time did not refer to the town of Santo Domingo but to the whole island Hispaniola.

2. Cope (1862, p. 177) introduced the new species *Anolis* (*Ctenocercus*) *coelestinus* from 'Western Hayti. . . near Jérémie'. He used the plural form 'specimens' although he reported the measurements and meristic data only for a single male specimen—as judged by the description of a well-developed dewlap ('goitre large') in the original publication—and provided 'No. 1500 Mus., Compar. Zool.' as the museum number

for his material. In 1914, Barbour mentioned that he had examined ‘the types of *A. coelestinus* (M. C. Z., No. 2,347)’, supporting the presumption that the original type material consisted of more than a single specimen. We obtained on loan a female specimen (MCZ 3347) labeled ‘syntype’ in the MCZ (Museum of Comparative Zoology) catalogue. According to the notes in the MCZ entry book (MCZ website; [http://mczbase.mcz.harvard.edu/guid/MCZ: Herp:R-3347](http://mczbase.mcz.harvard.edu/guid/MCZ:Herp:R-3347); accessed 22 January 2015), MCZ 3347 was collected by ‘Dr. Weinland’ in ‘Hayti, near Jérémie’ (original number ‘695’). This referred to David Friedrich Weinland, who spent six months in Jérémie, Haiti, in 1857–1858, and collected specimens of amphibians and reptiles later donated to the MCZ (Hedges & Conn 2012). Ramos & Powell (2001:729.3) reported upon ‘a cryptic note in EEW’s [E.E. Williams] hand’ noting that it [MCZ-R 3347] could not be a syntype since it was received after Cope’s description. However, they pointed out that, because no collection dates were entered, a syntype could have been received after its description.

3. Boulenger (1885, p. 44) listed *A. coelestinus* as a synonym of *A. chlorocyanus*, a view shared by Barbour (1914, p. 295). Barbour (1930, p. 119) resurrected *A. coelestinus* from the synonymy of *A. chlorocyanus*, stating that the latter has a ‘greater number of loreal rows’ and ‘smaller scales on the back, very fine scales on the dewlap, a different habit and coloration.’ Since that time this two-species concept and the respective assignments of names have remained unchanged (e.g. Mertens, 1939; Williams, 1965; Ramos & Powell, 2001).

4. One of us (G.K.) has examined the six syntypes of *Anolis chlorocyanus* (MNHN 785, 787, 2007.2066–09) as well as the only available syntype of *A. coelestinus* (MCZ 3347). The syntypes of *A. chlorocyanus* have dewlaps of double rows of small scales with no indication of a suffusion of black pigment on the posterior portion; a more or less distinct white subocular stripe; and 34–45 loreal scales arranged in 5–6 rows. Thus, the syntypes of *A. chlorocyanus* have the diagnostic traits of the taxonomic species *A. coelestinus* of current usage.

5. The name *Anolis chlorocyanus* has been used consistently for a well-known, predominantly North Island Hispaniolan anole species since the early 1930s (e.g. Barbour, 1930; Mertens, 1939; Williams 1965; Schwartz & Henderson, 1991; Ramos & Powell, 2001a; Henderson & Powell, 2009). Ramos & Powell (2001a) provided a comprehensive list of references in which the name *A. chlorocyanus* is used.

6. The name *A. coelestinus* has been applied consistently to a well-known, predominantly South Island Hispaniolan anole species since the early 1930s (e.g. Barbour, 1930, 1935, 1937; Cochran, 1941; Williams, 1965; Schwartz, 1969; Schwartz & Thomas 1975; Schwartz & Henderson, 1988, 1991; Powell et al., 1996; Ramos & Powell, 2001b; Henderson & Powell, 2009). Ramos & Powell (2001b) provided a comprehensive list of references in which this name is used.

7. Strict application of the Principle of Priority would require the replacement of *A. coelestinus* Cope, 1862 with *A. chlorocyanus* Duméril & Bibron, 1837. The species currently known as *Anolis chlorocyanus*, since Dunn (1930), would likewise be renamed; since no name is available for this taxonomic species as currently used, a new species would have to be described. According to our unpublished data, neither *A. peynadoi* Mertens, 1939 nor *A. cyanostictus* Mertens, 1939 represents the taxonomic species *A. chlorocyanus* of current usage. Replacing the name *Anolis coelestinus* by *A. chlorocyanus* would not be in the interest of stability of

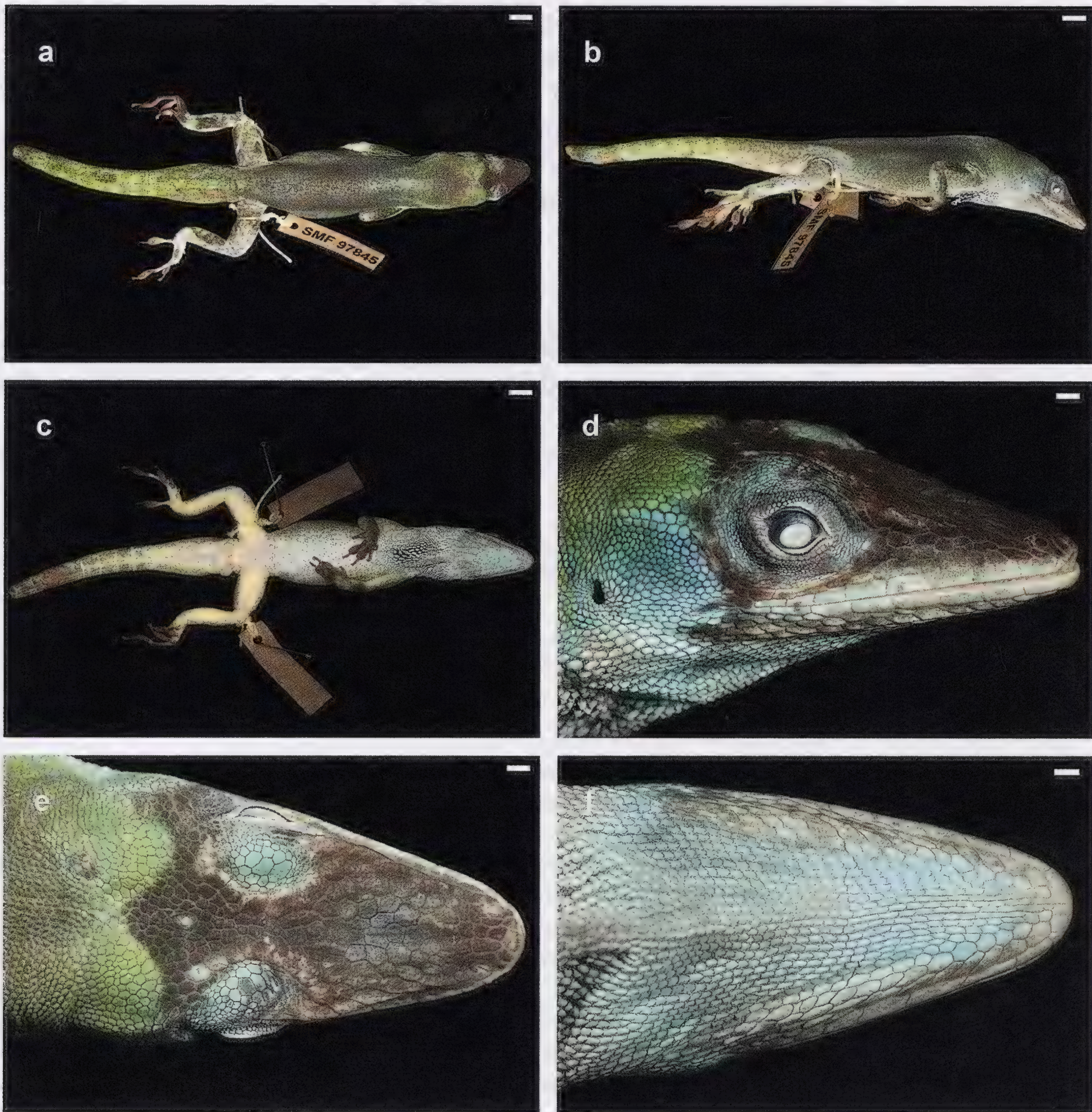


Fig. 1. Proposed neotype of *Anolis chlorocyanus* (SMF 97845): (a) dorsal view; (b) lateral view; (c) ventral view; (d) lateral view of head; (e) dorsal view of head; (f) ventral view of head. Scale bars equal 5.0 mm in (a–c) and 1.0 mm in (d–f).

nomenclature and would cause considerable confusion. This is especially so given the widespread use of *Anolis* spp. as model organisms in a variety of biological investigations (Huey et al., 1983), and the frequent use of these particular names in recent literature (e.g. Losos, 2009; Hedges, 2010; Glor & Warren, 2011; Kolbe et al., 2011).

8. We propose, in accordance with Article 75.6 of the Code, to avoid this confusion by setting aside the syntypes of *chlorocyanus* Duméril & Bibron, 1837 and conserving the specific name in accordance with prevailing usage by designating SMF 97845 (Fig. 1) as the neotype of *A. chlorocyanus*; SMF 97845 represents the taxonomic species *A. chlorocyanus* of current usage. SMF 97845 is an adult male from El Limón, Province Samaná, Dominican Republic, collected 21 October 2013 by Gunther Köhler and deposited in the permanent collection of the Forschungsinstitut Senckenberg, Frankfurt, Germany; Field tag number GK-4718. Tissue samples of SMF

97845 were taken from the tail tip, stored in an Eppendorf tube, filled with 96% ethanol, and stored at -20 °C at the tissue collection so that sequence data can be obtained in the future. This action would also conserve the name *Anolis coelestinus* Cope, 1862. The result of this application will be an integral part of an impending monograph on the green anoles of Hispaniola by the authors of this application. We herewith designate the only available syntype of *A. coelestinus* (MCZ 3347) as the lectotype of this nominal species.

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for *Anolis chlorocyanus* Duméril & Bibron, 1837 and to designate SMF 97845 as the neotype;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *chlorocyanus* Duméril & Bibron, 1837, as published in the binomen *Anolis chlorocyanus* and as defined by the neotype designated in (1) above;
 - (b) *coelestinus* Cope, 1862, as published in the binomen *Anolis coelestinus* and as defined by the lectotype of *A. coelestinus* (MCZ 3347) designated in para. (8) above.

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Acknowledgement of receipt of this application was published in BZN **71**: 215.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Comment on *Acarus putrescentiae* Schrank, 1781 (currently *Tyrophagus putrescentiae*; Acariformes, ACARIDAE): proposed conservation of usage by designation of a replacement neotype

(Case 3501; see BZN 67: 24–27; 71: 99–102)

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This is a response to Fan & Zhang's (BZN 71: 99–102) comment on Case 3501, which involves a conflict between two fundamental principles of zoological nomenclature as embodied in the Code: the Principle of Priority and the need for stability in the use of names. The Introduction of the current Code states, '...the Code recognizes that the rigid application of the Principle of Priority may, in certain cases, upset a long-accepted name in its accustomed meaning through the validation of a little-known, or even long-forgotten name. Therefore the rules must enable the Principle of Priority to be set aside on occasions when its application would be destructive of stability or universality, or would cause confusion'.

Here we provide a brief overview of the case, a discussion of the alternative solution (Fan & Zhang, BZN 71: 99–102), evaluate the reaction of the scientific community, and then give a detailed response to Fan & Zhang's criticism. Throughout the text, we use the following conventions: *Tyrophagus putrescentiae* (common species, = *communis* sensu Fan & Zhang, 2007b) and *Tyrophagus fanetzhangorum* (rare species, = *putrescentiae* sensu Fan & Zhang, 2007b). These two species are genetically distinct and can be easily separated by morphology (Fan & Zhang, 2007; Klimov & OConnor, 2009) and DNA sequences (Beroiz et al., 2014; Klimov & OConnor, 2009).

Case overview

During the course of a revision of Australasian species of the mite genus *Tyrophagus* Oudemans, 1924, Fan & Zhang (2007b) discovered that two distinct morphospecies had been confused under the name, *Tyrophagus putrescentiae* (Schrank, 1781), an extremely common, cosmopolitan mite of considerable medical and agricultural importance. In their material examined from the region and elsewhere, one of the forms was considered 'common' and the other 'rare'. They determined that the neotype designated for this species by Robertson (1959) and validated by Opinion 1298 (BZN 42: 124–126 (June 1985)) does not correspond to the commoner species but to the rarer species. Strictly applying the Principle of Priority, Fan & Zhang (2007b) applied the name '*Tyrophagus putrescentiae*' to the rare species. Those authors did not follow the provision of Article 75.6, which states, 'When an author discovers that the existing name-bearing type of a nominal species-group taxon is not in taxonomic accord with the prevailing usage of names and stability or universality

is threatened thereby, he or she should maintain prevailing usage [Art. 82] and request the Commission to set aside under its plenary power [Art. 81] the existing name-bearing type and designate a neotype.’ Note that we did not suggest that Robertson’s original neotype designation is invalid under Article 75.7 (new in the 4th edition of the Code) because it does appear to meet all the qualifying conditions of the current edition for such designations.

The action of Fan & Zhang (2007b) created nomenclatorial instability because it required that the name of the common species be changed. Based on our study of taxa with existing types (Klimov & OConnor, 2009), there are several available names for the common species. Among these, *T. americanus*, *T. breviceps*, and *T. cocciphilus*, are the oldest names proposed in the same post-1900 publication (Banks, 1906). There are three species described before 1899 and included in the synonymy of *T. putrescentiae* by Robertson (1959) for which types could not be located (*Coelognathus morsitans* Hessling, 1852, *Tyroglyphus lintneri* Osborn, 1893 and *Tyroglyphus ananas* Tryon, 1898). Because these latter names meet the criteria of Article 23.9, they would not be given precedence over Banks’ (1906) names. Because the common species has a long taxonomic history, types of these or additional possibly synonymous taxa may be discovered in the future. This poses a great nomenclatorial challenge – choosing the oldest available synonym for the common species in a way that prevents further changes of the name due to the possibility of discovery of additional historical types.

To maintain the stability of nomenclature, we petitioned the Commission, under Article 75.6, to set aside the existing neotype for *Acarus putrescentiae* Schrank, 1781, and designate a replacement neotype that is consistent with the prevailing usage of the name. Approval of this petition will maintain nomenclatorial stability because there would be no need to change names and will provide a reasonable, although inherently probabilistic, legacy for taxonomic and faunistic works published before 2007. Thus, we propose a conservative approach that does not depend on the outcome of future work and which provides both stability and legacy.

Fan & Zhang’s solution

In their comments to our Petition, Fan & Zhang (BZN 71:102) proposed another solution: ‘Nomenclaturally, the proposers of case 3501 can easily solve the taxonomic problem by synonymizing *T. communis* with a senior name’. This, unfortunately, would not solve the central problem of our petition because the nomenclatorial instability for the common species is linked to the uncertainties associated with the historical types / descriptions (see above). Treatment of *T. communis* (a junior synonym) is a minor issue here.

If Fan & Zhang’s solution were adopted, then the following situation would arise: (i) the common species (*T. putrescentiae*, as understood by the majority of authors) would have no accepted name pending a large-scale taxonomic revision of historical types of taxa described between 1900 and 1906; but (ii) many researchers and public databases (e.g. GenBank) would be prompted to change the name of the common species to *T. communis* (which is an invalid name); and (iii) after a comprehensive study of historical types and descriptions, the common species would change its name again.

Another disruption associated with Fan & Zhang’s solution is the need to change, possibly multiple times, acronyms for important immunogenic proteins. There are

more than 20 groups of allergens that have a specific nomenclature proposed by the International Union of Immunological Societies (IUIS) Subcommittee of Allergen Nomenclature and Standardization (King et al., 1994). For example, Tyr p 2 and Tyr p 10 are the designations for group 2 and 10 allergens of *Tyrophagus putrescentiae*, respectively. These acronyms are so widespread in immunological literature and bioinformatics databases ('prevailing usage' of the name is most often seen in this context) that changing the species name and, concurrently, the allergen abbreviations will be met with a great reluctance from researchers in the fields of medicine, immunology, and molecular biology.

Reaction of the scientific community

Our petition was published five years ago. Subsequently, it has been possible to evaluate the response of the scientific community to our proposal, i.e. to apply Article 82 and conserve prevailing usage. A search for '*Tyrophagus putrescentiae*' yielded 1,870 results and only 4 results for '*Tyrophagus communis*' (Google Scholar, Dec. 24, 2014, phrase quoted, records published since 2009 filtered). For the four results mentioning *T. communis*, only one record used this name as valid – a Ph.D. thesis written entirely in Chinese. Another search for '*Tyrophagus communis*' in the Zoological Record database retrieved a single paper using *T. communis* as a valid name (Cotter et al., 2011). There were no *T. communis* records in the GenBank taxonomy or sequence databases, but for *T. putrescentiae* there were 751 DNA and 1,234 EST sequences (all can be unambiguously attributed to this species).

It is very unlikely that a substantial number of the 1,870 records citing *T. putrescentiae* may refer to Fan & Zhang's concept (i.e. the rare species), because it would be accompanied by an explicit citation. Google Scholar gives only 22 citations of Fan & Zhang's monograph since 2009. To illustrate our point further, we give a list of 16 papers and 1 taxonomic monograph published after 2009 that are in favor of preserving the name of the common species (Beroiz et al., 2014; Eaton & Kells, 2009; Freitag & Kells, 2013; Frost et al., 2010; Guanilo et al., 2012; Hubert et al., 2009, 2012a, 2012b, 2013; Kucerova & Stejskal, 2009; Murillo et al., 2013; Palyvos & Emmanouel, 2011; Que et al., 2014; Solarz, 2012; Stara et al., 2014; Stara et al., 2011; Torre Santana & Rodríguez Castro, 2010). These articles either explicitly cited the taxonomic problem, or deposited sequences matching *Tyrophagus putrescentiae*, or there was secondary evidence (e.g. Freitag cited in a Ph.D. thesis but not in the related paper; Hubert and his group based their work on a culture with known identity).

The evidence given above indicates that the scientific community consistently followed our citation of Article 82 to maintain the prevailing usage of *Tyrophagus putrescentiae* and not to change it to *T. communis* (or any other name).

Fan & Zhang's criticism of the Case

Below we number all sections as they appeared in Fan & Zhang's comment and reply to their specific critiques.

(1) 'Lack of understanding of the Code and disregard of its rules by authors of Case 3501'.

1.1. Article 75.4 was cited as 'violated'. This Article states 'The first neotype designation . . . is valid and no subsequent designation, *except one made by the*

Commission . . . , has any validity . . . [italics ours]. Our petition specifically seeks such a subsequent neotype designation under the plenary power of the Commission directly in accordance with Article 75.4.

1.2. Article 80.9 was cited as ‘violated’. This Article states ‘Previous decisions of the Commission. No ruling given by the Commission . . . is to be set aside without the consent of the Commission’. Specifically in accordance with Article 80.9, we seek the consent of the Commission to set aside its previous decision on the neotype of *Acarus putrescentiae*.

1.3. Fan & Zhang also criticized us for designating neoparatypes (p. 99). However, our petition does not designate neoparatypes nor even mention them. Neoparatypes are not regulated by the Code, hence are irrelevant to the issue.

(2) ‘Lack of sufficient evidence for ‘prevailing usage’ in Case 3501’.

To determine prevailing usage of the name *T. putrescentiae*, in 2007–2009 we conducted a survey of works using this name and published over the preceding 20 years, requesting authors of 49 of these works to allow us to examine their specimens. Of these, the authors of 31 works sent their specimens. Other authors reported that their vouchers were lost or not saved, and some authors responded that they no longer worked in acarology or did not respond at all. Thus, it was impossible to conduct an exhaustive study (as suggested by Fan & Zhang). Because all of these published works were treated equally (i.e. no selection bias), our survey is both representative and instructive in estimating prevailing usage. The result: 30 works (14 authors) actually published on *T. putrescentiae* and one work actually on *T. fanetzhangorum*.

Below we discuss more specific criticisms presented in this section.

2.1. ‘They did not mention that Fan & Zhang (2007b) examined some 60 [actually only 26 listed] specimens [of the rare species] available to them’ (p. 100) and the lengthy list of distributions of both species on pp. 100–101. This criticism is irrelevant to the Code definition of prevailing usage. Prevailing usage is defined as usage by ‘a substantial majority of the most recent authors’, not based on specimens examined or geographic distribution.

2.2. ‘For hundreds of studies on *T. putrescentiae*, a sample of 31 published studies by 14 authors is a very small minority’ (p. 100). The Glossary of the Code defines prevailing usage of a name as: ‘that usage of the name which is adopted by at least a substantial majority of the most recent authors concerned with the relevant taxon, irrespective of how long ago their work was published’. We do not consider our verifying the usage of *T. putrescentiae* in 30 of 31 cases in the past 20 years out of 49 attempts as representing ‘a very small minority’.

2.3. Fan & Zhang argue that we did not demonstrate prevailing usage because our survey was ‘biased’ by papers based on ‘laboratory-reared material’. This is not a bias but a reflection of the real situation. *T. putrescentiae* is widely used in various molecular, medical, immunological, and pest-control studies that rely on pure cultures reared in a standardized manner in a laboratory (rather than collected from environmental samples). Not surprisingly, usage of this name in these papers is much more frequent than in taxonomic ones. We note that this argument is somehow ironic because Fan & Zhang’s name ‘*T. communis*’ is also based on specimens from a laboratory culture.

2.4. Although the issue of whether *T. putrescentiae* is more common in nature than *T. fanetzhangorum* is irrelevant to determining prevailing usage, Fan & Zhang challenge this, unfortunately providing no supporting evidence. Because in the text we use ‘common’ for *T. putrescentiae* and ‘rare’ for *T. fanetzhangorum*, we give reasons for such definitions here: (i) in our collection (UMMZ) there are nine 100-slide boxes with *T. putrescentiae* and only one box (two collection localities, fewer than 20 slides) for *T. fanetzhangorum*; (ii) the specimen count for *T. putrescentiae* (= *communis*) is 355+ as against 26 for *T. fanetzhangorum* in the *Tyrophagus* monograph (Fan & Zhang, 2007); (iii) *T. putrescentiae* was included in the latest key to stored product and house dust mites, but *T. fanetzhangorum* was not, despite its author’s awareness of the name (Solarz, 2012), indicating its low or negligible prevalence as compared to *T. putrescentiae*.

In conclusion, we do not think our sample was biased or insufficient regarding the recent published literature, which is the point of contention with respect to Code application. It was not our point that our *T. putrescentiae* was more ‘common’ in nature (although evidence suggests it is), only that we verified that the name was applied to the single (‘common’) species by the overwhelming majority of recent authors, thus constituting prevailing usage.

(3) ‘Inaccurate perceptions of presumed disruption to stability by authors of Case 3501’. The case of *Varroa destructor* versus *Varroa jacobsoni* was given as an example where a community accepted a name change following revision of species concepts. However, in this example both names are valid. In our case, one of the names, *T. communis*, is invalid (a junior synonym), and there is uncertainty with respect to choosing the oldest available junior synonym of (the common) *T. putrescentiae* should that name be applied to the rare species. Moreover, unlike the case of the *Varroa* species, which parasitize different host bees in different geographic regions, the identity of the common and rare species cannot be deduced from their habitats but only from their morphologies or DNA sequences. Thus, changing the concept of *T. putrescentiae* will create a large-scale nomenclatorial conundrum and result in great instability (see the section ‘Fan & Zhang’s solution’ above).

(4) ‘Misinterpretations by the authors of this case of the work of Fan & Zhang (2007a, b)’

Here Fan & Zhang refer to ‘misinterpretations’ of their two published works, however, in their comment specifically referring to the names *T. americanus*, *T. breviceps*, *T. cocciphilus*, and *T. castellanii*, they refer to unpublished data (without specifying their nature). The nature of their unpublished evidence can be seen from Dr. Fan’s message distributed to the Acarology listserv on Jul 12 2009: ‘According to our study of the specimens (*Tyroglyphus americanus* Banks, 1906; *T. breviceps* Banks, 1906; *T. cocciphilus* Banks, 1906; *T. sacchari* Banks, 1906 [sic], the conditions of these specimens were not ideal, even after re-mounting), at that moment we could not conclude that they were conspecific; therefore, we retained names. Therefore, it is better to retain these names until we are capable of resolving the problems.’

The type series of these species were originally mounted in Canada balsam (a hydrophobic medium with a poor refractive index for mites), and for that reason, it was impossible to study them in the detail necessary in that state. Our subsequent examination of these specimens indicated someone had attempted to remount them in an aqueous medium (Hoyer’s), but the attempt resulted in damage to the

specimens. However, as we indicated in our publication (Klimov & OConnor, 2009a), there were multiple syntype slides, and we were able to dissolve the original mounting medium of representatives by consecutive xylene/ethanol washes and then successfully remount them in Hoyer's. This produced excellent specimens, with all diagnostic characters clearly visible. Based on the remounted specimens, we designated lectotypes, synonymized *T. americanus*, *T. breviceps*, and *T. cocciphilus* with *T. putrescentiae*, and provided microscope photographs illustrating the diagnostic characters in the remounted specimens (Klimov & OConnor 2009a; BZN 67: 24–27). Regrettably, Fan & Zhang (BZN 71: 99–102) did not comment on this critical synonymy (likewise our synonymy of other taxa, except for *T. amboinensis*) that make *T. communis* Fan & Zhang a junior synonym and thus invalid.

Acknowledgements

We are grateful to ICZN Commissioner Douglas Yanega (*University of California Riverside*), for comments and interpretations of some Articles of the Code. This research was supported by U.S. National Science Foundation (NSF) grant DEB-0613769 to BMOC, Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) Ciência sem fronteiras (Brazil) grant PVE 88881.064989/2014–01 to Almir Pepato and PBK, Ministry of Education and Science of the Russian Federation grant (No 6.1933.2014/K project code 1933) and Russian Foundation for Basic Research grant No 15–04–05185 A to PBK.

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Comment on *Saturnia canningi* Hutton, 1859 (currently *Samia canningi*; Insecta, Lepidoptera, SATURNIIDAE): proposed conservation
(Case 3638; see BZN **70**: 229–233)

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All points mentioned in Case 3638 by Peigler & Luikham can be completely accepted. As co-author of Peigler's revision of the genus *Samia* the cited literature and facts are well-known to me, and I think that nothing else needs to be added.

I would advise the Commission to rule in this case exactly as proposed by the authors.

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In my opinion, Case 3638 should be supported and accepted. The authors have explained the Case based on a wealth of information. It would be very helpful to have two different valid names to address the wild population of the Himalaya as *canningi* and the domesticated 'race' as *ricini* separately without any potential danger of confusing them and in concordance with the overwhelming majority of the literature.

The Commission should rule in favour of the points proposed by the authors of this case.

**Comments on *Antheraea roylei* Moore, 1859 (Insecta, Lepidoptera, SATURNIIDAE):
proposed conservation**

(Case 3635; see BZN 70: 221–228)

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Case 3635 should be rejected by the ICZN as there is no reason to rule on the availability of the two involved taxa, *Antheraea roylei* Moore, 1859 and *Bombyx* (*Saturnia*) *pernyi* Guérin-Méneville, 1855 (now in *Antheraea*). The authors act on the incorrect assumption that both taxa are conspecific, and that *Antheraea pernyi* would be the domesticated form of its wild progenitor *Antheraea roylei*. In the following points (with similar order and numbering as in the original Case 3635) it is shown that both taxa are not conspecific.

1. The name *A. roylei* was used several times since its misspelling in the original description by a few German authors in the late 20th and early 21st century (e.g. Paukstadt et al., 2000; Paukstadt & Paukstadt, 2008; Brechlin & Paukstadt, 2010), but nevertheless, with the argumentation of Nässig & Holloway (2010) and the continued citation as *A. roylei* in most of the publications since its original description, it becomes clear that *A. roylei* should be the nomen protectum and *A. roylei* the nomen oblitum. In total, there were less than 10 authors citing the taxon as *A. roylei*, so the conditions of Article 23.9.1.2 are fulfilled anyway.

3. The argumentation by Peigler (2012) and paragraph 3 of Case 3635, that both *A. roylei* and *A. pernyi* are the same biological species, cannot be followed. The true wild *A. roylei* occurs on the southern slopes of the Himalayas in countries such as Afghanistan, Pakistan, Nepal, Bhutan and India (Sikkim, Assam, Arunachal Pradesh), and *A. pernyi* occurs well-separated from this species in the wild in most parts of PR China, Taiwan, Mongolia, SE Russia and Korea. In addition to *A. roylei* and *A. pernyi*, there exist some further related species described from further south (e.g. *A. korintjiana* Bouvier, 1928, *A. lampei* Nässig & Holloway, 1989) which were not mentioned in this case at all. Of course there can always occur escapees from sericultural colonies, or material in collections derived from dealers who sold specimens from silk farms, which may be the case for specimens from northern China, far east Russia or Japan, and which can, for example, be determined by fat bodies of females, which under normal conditions would not be attracted to light traps; however, in material from different provinces in China, collected by professional and experienced entomologists during the last two decades, a small number of males of *A. pernyi* were always found among other typically wild species in their natural habitats. Introduced populations of *A. pernyi* on Mallorca, Balearic Islands, Spain, did not last only 'less than 10 years' after their introduction in 1881 but still occur uncommonly in the wild there; a review with actual records for the last 50 years was published only recently by Pinya et al. (2013). Of course, populations of *A. pernyi* introduced in Romania, Ukraine or Japan for silk production did not persist for long, although records are known for Japan (Kishida, 2012), but the extinction of populations only in probably inadequate climate zones is no reason to argue for the synonymy of *A. pernyi* and *A. roylei*. Also the fact that Chinese authors regularly assigned the name *A. pernyi* to specimens collected in China, while in other countries

such as India, Nepal, Thailand etc. local writers ‘determined’ their records as *A. roylei*, does not mean anything. As we know, especially in Indian and Chinese literature, many misidentifications of even well-known SATURNIIDAE species exist, so published misidentifications are no reason to argue for conspecificity. Finally, the source of the material used in Jolly’s studies (Jolly et al., 1979) on offspring of multiple generations is somewhat tentative, and it is not certain that he really used true *A. pernyi* for his hybrids.

4. Specimens of *A. pernyi* and *A. roylei* are easily separated from each other by the different form of the forewings in males (more rounded in *A. pernyi*, more elongate and slender in *A. roylei*), and in fact do have ‘consistent wing pattern characters to separate them’: *A. pernyi* is always of a much lighter, more ochreous colour and has larger ocelli on its wings, especially in the males. Larvae differ in details, just as male genitalia do in series. These are additional characters to separate both taxa, neglected by Peigler & Chutia, which goes along with different cocoon structures and chromosome numbers of both taxa, as mentioned in paragraph 4 of Case 3635. All this is further supported by results of DNA barcoding of the COI marker gene of a larger series of fresh material which was not used in the studies of Peigler & Chutia (unpublished data).

5. There is no evidence that *A. roylei* represents the wild form while *A. pernyi* exists only in captive colonies. *A. roylei* exists in the wild as mentioned above, but is also used in India for Tussah sericulture; *A. pernyi* is a widespread species which occurs in the wild in most southern and central parts of PR China and in Taiwan; records mentioned in Case 3635 as *A. roylei* for the Chinese provinces of Fujian, Jiangxi, Hunan, Sichuan, Yunnan, Guangdong, Guangxi, and Shaanxi are in fact wild collected specimens of *A. pernyi*. Records from northern China, Korea, Russia and Japan may be in part based on escapees from silk productions, but at least for far east Russia and Korea some wild records exist, and it is an incorrect assumption that *A. pernyi* does not have wild populations there. Of course it was introduced by man into Japan.

6. While Peigler & Chutia are correct with their statement that both *Bombyx mori* and *Samia ricini* are entirely of sericultural origin and do not exist in nature (although sometimes some males of *S. ricini* escape from silk farms in Thailand and Vietnam and can be collected around lights), this is not true for *A. pernyi* in southern China and Taiwan where the species occurs in the wild and is a typical faunal element, although also used for silk production. Both *B. mori* and *S. ricini* do not fly regularly, but *A. pernyi* flies very well.

7. The argumentation by Peigler & Chutia is not correct: for the entire Chinese area both wild and sericultural populations are *A. pernyi* and, to my knowledge with respect to sericulture, never *A. roylei*, while it is the opposite in India. There is not much confusion even in countries south of China if this fact can be accepted, but there are lots of misidentifications in especially sericultural literature which must be corrected in a revisional work. Even from their handling of other involved SATURNIIDAE species, all cited Indian works are taxonomically irrelevant as they are not based on modern taxonomy but still handle species’ identities on the level of Hampson (1893); also Pinratana & Lampe (1990) and Allen (1993) are out of date with their identifications.

8. The mentioned publications of Chinese works contain many misidentifications as well, and in most publications determinations are just copied from previous

literature, often including their misspellings. Nevertheless, Chinese authors as cited in the Case used the right name *A. pernyi* in general for Chinese populations, and only the taxon *A. pernyi yunnanensis* Zhu & Wang, 1993 (which in fact is a synonym of *A. platessa* Rothschild, 1903) leads to some confusion. In general there is no need to distinguish in this case between wild and sericultural populations of *A. pernyi*. The cited publications of Mell (1939) and Sonan (1937) both contain misidentifications of *A. pernyi* as *A. roylei*.

9. All cited publications ('major taxonomic catalogues and monographs') used the correct classification with *A. pernyi* originating from China and *A. roylei* being the sub-Himalayan species, so there is no reason at all to change this at the moment. Only a revision of the entire species group would allow a better overview, with classification of further involved taxa mainly with more southern distribution.

10. Also the additional publications used the correct classification with two different species, but not in the sense it is now proposed in this Case.

11. Again, it is somewhat tentative to discuss the hybrids; the source of the '*A. pernyi*'-stock used is uncertain, and it is not in fact clear whether authors based their work on true *A. roylei* specimens.

12. As there is no need to synonymise *A. pernyi* with *A. roylei*, this entire matter can be ignored. Of course the wild populations of *A. pernyi* in China and their habitats should be protected.

13. The authors are correct to ask for the continuing use of the two names *A. pernyi* and *A. roylei* in future, but they are not correct with their assumption that *A. pernyi* does not have feral populations in China and elsewhere. Judging only from the fact that an insect is used in sericulture does not mean that the wild progenitor would need to have a different name from its domesticated relative. A similar case would exist for *Antheraea assamensis* (Helfer, 1837) which is used in Assamese sericulture for the production of Muga silk; probably nobody would propose the use of a different name for its wild progenitor which is widespread in the sub-Himalayan area.

14. Judging from all those arguments, it becomes clear that *Antheraea roylei* and *Antheraea pernyi* are different species; therefore no synonymy exists, and no conservation of the name for a domesticated race is necessary here at all. Case 3635 should thus be rejected.

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In my opinion, Case 3635 should be rejected by the Commission as there is no reason to rule on the availability of the names of the two taxa involved, *Antheraea roylei* Moore, 1859, and *Bombyx* (*Saturnia*) *pernyi* Guérin-Méneville, 1855 (now in *Antheraea*). The authors wrote their suggestion based on the incorrect assumption that both taxa are conspecific, and that *Antheraea pernyi* would be the domesticated form of its wild progenitor *Antheraea roylei*. This interpretation is mainly based on erroneous and misleading literature (especially from the field of sericulture) and insufficient wild-collected material from all over Asia being available to the two authors.

As has also been demonstrated at length in the comment on Case 3635 by S. Naumann (BZN, this issue), it is evident from external and internal morphology of adult moths as well as morphology of preimaginal instars, from biogeographical considerations (in combination with other species of this species-group from SE Asia) and also from the DNA COI barcode sequences (all these characters studied on a wealth of material collected in the wild at very many localities in Asia) that both taxa are not conspecific (unpublished data). There are indeed sericultural forms, but in the present species-group these are not yet selected into domesticated 'races' unable to survive in the wild, as has been done with especially *Bombyx mori/mandarina* and (in part) *Samia ricini/canningi*. The case of *Antheraea pernyi* and *A. roylei* is different from these other examples in sericulture, and the other two cases of established sericulture in *Antheraea* species probably follow the same pattern.

Case 3635 should thus be rejected, as the two taxa are not conspecific but are clearly separate species.

Comment on *Spracklandus* Hoser, 2009 (Reptilia, Serpentes, ELAPIDAE): request for confirmation of the availability of the generic name and for the nomenclatural validation of the journal in which it was published

(Case 3601; see BZN 70: 234–237; 71: 30–38, 133–135, 181–182, 252–253)

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The comments by Kaiser (BZN 71: 30–35), Schleip (BZN 71: 35–36), Wüster et al. (BZN 71: 37–38) and Thomson (BZN 71: 133–135) provide no hard evidence to rebut any element of Case 3601 as originally published in BZN. Correspondents on Taxacom and the ICZN list online have correctly dismissed the claims of these authors as ‘bluster’. Thorpe (in litt.) added that the comments submitted by Hoser’s enemies on Case 3601 were absolutely laughable in terms of the Code, and this view was repeated in similar words by Dubois, Wellington and others (in litt. 2014). Furthermore all claims raised by Kaiser, Schleip, Wüster et al. and Thomson, merely repeated earlier discredited claims of Kaiser (2013) and Kaiser et al. (2013). These were rebutted in detail by Hoser (2012a) (regarding the *Spracklandus* matter), Hoser (2012b) and Dubois (in litt.) in relation to other issues alleged by the group. However I here deal briefly with some of the points for purpose of further rebuttal and for discussion in BZN.

Claims by Kaiser (BZN 71: 133–135) that the Hoser works have been criticized by others have no bearing on the nomenclature and the case for ICZN confirmation of the nomenclatural availability within the Code of the name *Spracklandus* Hoser, 2009. In any event, the criticism of scientific papers is normal scientific discourse, even if labelled by critics as ‘unscientific’. Kaiser has not in fact produced any evidence to suggest that Australasian Journal of Herpetology (AJH) Issue 7 did not comply with Article 8.1.3 of the Code. The distributed issue of AJH Issue 7 is no different from other acknowledged Code-compliant papers published daily. It was published in print with ink on paper in numerous durable copies. An alleged printing defect in terms of printing quality control as suggested by Kaiser (2014) does not in any way make AJH Issue 7 invalid under the Code or Article 8 of the Code. Kaiser’s statement that ‘I have seen no proof that there were ever more than a handful of copies produced’ is meaningless. Absence of evidence is not evidence of absence. Furthermore at no stage have Kaiser, Wallach, Wüster, Broadley or Schleip asked the logical question of me as to where and by whom original copies were distributed.

Hoser (2012a) stated that ‘All issues of AJH were published in hard copy (over 100 originals of each) and later online, being posted online on average 10 days after the print copies were first received and distributed, by which stage receipts from recipients had been received and archived.’ Kaiser, Schleip or Wüster et al. have never produced any evidence to contradict this obvious fact or properly sought contradictory evidence. Kaiser (2014b) used four arguments to allege that AJH was in violation of Article 8.1.3 of the Code. These arguments are refuted in detail below.

- (1) It was published in an edition, in the usual meaning and understanding of this word, and even cited as such by his close colleagues (Wallach et al., 2009, p. 34).

- (2) There is uncontradicted evidence that numerous copies were made (e.g. Hoser, 2012a). The only evidence provided by Kaiser, Wallach, Wüster, Broadley or Schleip is a statement that they did not make proper or reasonable enquiries as to where copies were distributed. This included failing to check the most likely repositories, such as Zoological Record, as specified in the Code (Recommendation 8A) or persons named in the relevant papers.
- (3) The original copies were all identical in words, fonts, pagination, margins and all other relevant details.
- (4) The copies were 'durable' in the commonly accepted meaning of the word, including being printed on high quality white gloss paper (superior to that used by most other published journals) and printed in black ink.

Furthermore, all Kaiser's claims against the method of printing of AJH in terms of potential Code-compliance (repeated in part by Wüster et al., 2014) are in fact rejected by Schleip (BZN 71: 35–36) in his point 5.

Schleip's claim 'The existence of this outlet [AJH] was primarily proclaimed in herpetoculture internet forums, and zoologists unlikely to participate in such forums were widely unaware of its existence (see the Code, Appendix B.8, General Recommendations).' is clearly false. In the pre-checking of Case 3601, the Commission Secretariat independently established that AJH was sent to numerous places including Zoological Record as the most important part of the Code's 'wide dissemination' recommendation (Recommendation 8A). Significantly, Schleip's claim is also refuted by Wüster (in litt. 2009), who wrote 'You have been accused of many things. Lack of dissemination of your articles has not been one of them'. Schleip's claim 'However, on the date [Issue 7 of AJH] was distributed, it was not obtainable by the public' is patently false. AJH was available at all relevant times.

Schleip (BZN 71: 35–36) stated 'In the absence of evidence to the contrary, it is not possible to determine whether or not the copies were printed in accordance with Article 8.1.3 or 'printed on demand'. Kaiser (BZN 71: 30–35) asserted 'I believe this shows that there really was no print run of numerous identical and durable copies'. These and similar statements about the availability of AJH and the relevant website are incorrect. Printed issues have always been offered for sale, the price of each being determined by size. I have often chosen to waive fees to persons requesting issues or photocopies of papers, as was the case with Wallach in 2009. As each issue of the journal was published, the relevant details were added to the relevant parts of the website in accordance with similar practices by publishers of other scientific literature.

Kaiser's (BZN 71: 30–35) prediction of mass disobedience against the Code in the event of a judgement in favour of *Spracklandus* was repeated by Wüster et al. (BZN 71: 37–38), Thomson (BZN 71: 133–135) and Schleip (BZN 71: 31–36), who said 'If the Commission, however, were to vote in favor of Case 3601 and declare the name *Spracklandus* Hoser, 2009 available . . . I predict that the majority of herpetologists will follow the recommendations of Kaiser et al. (2013) and continue to ignore AJH as a reliable source for nomenclatural and taxonomic information'. This is the same prediction made in BZN in relation to the Wells & Wellington papers and names proposed within them made by Stone and others. Stone (1988) wrote: 'If the Commission takes no action with respect to the nomenclature proposed in these publications other scientists may of course choose to ignore that obligation'. King

(1988) made similar comments to those of Kaiser et al. (2013) when he said: ‘If [the ICZN] fail to [suppress the works of Wells and Wellington] they will jeopardise the survival of the system of nomenclature which we all use’. Following the Commission’s judgement in favour of Wells & Wellington (ICZN, 1991) there was no such mass disobedience against the Code, and in the fullness of time the original Code-compliant names were accepted and widely used (Cogger, 2014a; Shea, in litt.) and the Code survived intact. This usage included the original Code-compliant names being used by authors in favour of the junior synonyms coined by the protesters who had hoped the ICZN would formally suppress the earlier Code-compliant papers (Cogger, 2014a; Shea, in litt.).

Kaiser’s claim to represent ‘the herpetological community’ (as also made by Wüster et al., BZN: 37–38) is false, as demonstrated by Wellington, Wells, and others (in litt. 2013–2014), but is similar to the claims made by those seeking to suppress the Wells & Wellington papers (see ICZN, 1991). Similar claims made by Kaiser in comments on the current case must also be rejected.

Cogger (2014 and in litt.), Dubois, Eipper, Mutton, Shea, Thorpe, Wellington, Wells and many other eminent herpetologists (in litt. 2013–2014) have condemned the Kaiser scheme to replace the names of hundreds of valid taxa with new names. This clearly disproves the claim by Kaiser (2014) that he has broad agreement within the herpetological community for his plan to step outside the Code. In a public online forum Wells told Wüster and Schleip, ‘what you and others are doing in this regard is highly contemptuous of the authority of the ICZN’. Thorpe (in litt. 2013) wrote ‘At the end of the day, Wolfgang, you are just complaining about the authorship of names which may have to be used as valid . . . complaining that they are not yours (or those of people you choose to consider to be colleagues. . .)’. Shea (in litt.), described Kaiser et al.’s (2013) plan as being ‘unworkable’. Eipper (in litt.) noted ‘You cannot use a viewpoint to act as a veto to disregard the use of the Code’.

More recently, Schleip (2014) renamed *Leiopython hoseae* Hoser, 2000 with his own name ‘*L. meridionalis*’. Schleip claimed that Hoser (2000) did not comply with Article 8.1.1 of the code (invoking Kaiser et al. 2013 and Kaiser 2014), which reversed his own opinion expressed in Schleip (2008), Schleip & O’Shea (2010) and even Kaiser et al. (2013), all of whom accepted and used the correct Hoser’s (2000) name. Significantly, Schleip (2014) was published in the face of advice by two separate expert reviewers that his paper’s claims against Hoser (2000) were false and that he would be acting in contempt of the Code (Shea, Raw, in litt.). Shea formally recommended rejection of the Schleip paper to the editors of Journal of Herpetology. The publication of Schleip (2014) was also condemned by Wellington, Uetz and Cogger (in litt.) within hours of its appearance online. Uetz asked ‘How can this go past a reviewer or editor?’ In a similar example, Hedges et al. (2014) used the Kaiser ‘veto’ to overwrite the previously accepted and used *Argyrophis* Gray, 1845 with their own coined name, seriously destabilizing the nomenclature of the blindsnakes.

The claim by Wüster et al. (BZN 71: 37–38) that Hoser had unethically scooped their own allegedly pending work by naming *Spracklandus* is rebutted by Wüster himself (in litt.) where six days after the publication of Hoser (2009), he condemned the taxonomy in that paper to a global audience and added: ‘The case for keeping [*Naja*] as a single genus was made by Wüster et al., 2007.’ Fry (in litt.) followed this on the same date with ‘Wolfgang’s 2007 paper already considered the higher order

taxonomy of cobras and quite rightly lumped them into a single genus'. Hoser (2009) had clearly rejected Wüster's own published taxonomy and the appropriate Code-compliant nomenclature of *Spracklandus* Hoser, 2009 followed from this. From the content of Wüster (in litt., 2009) it is clear that Wüster et al. amended their own taxonomic views to align with those of Hoser, well after the publication of Hoser (2009). This means it was not possible for Hoser to have improperly knowingly 'scooped' any work or ideas of Wüster at the time Hoser (2009) was published, as Wüster et al. have more recently alleged.

Case 3601 as originally put by myself should therefore be upheld by the Commission. It is in the interests of long-term nomenclatural stability that the Commission act decisively. It should make a strong statement condemning the actions of Kaiser et al., who have aggressively operated in contempt of the Code. Failure to do so will destabilize taxonomy and nomenclature. The issue is not 'Hoser' but the stability of the Code. The Commission must protect the Code from Kaiser et al. and others who will emulate them to create nomenclatural chaos if their current campaign is successful.

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1. In Case 3601 Raymond Hoser has asked the Commission to validate for the purposes of nomenclature the name *Spracklandus* Hoser, 2009, and ‘the journal in which it was published,’ issue 7 of the *Australasian Journal of Herpetology* (AJH). We note that the entire run of AJH has been written, edited, and published solely by Hoser. Although his requests to the Commission were presented as narrow and, in his words, ‘routine matters,’ we are convinced that they represent an important tipping-point with broad implications of major concern for zoological taxonomy and nomenclature as a whole and, by extension, the greater scientific community. Since Hoser’s actions and works have failed to follow scientific best practices (e.g. Turtle Taxonomy Working Group, 2007, 2014; Kaiser et al., 2013; Kaiser, 2014) and both the Commission’s general Recommendations and Code of Ethics in Appendix A, the global herpetological community has widely rejected his taxonomic decisions and resultant nomenclature. This has unfortunately caused a confusing dual nomenclature to develop in the herpetological community, with most boycotting or ignoring Hoser’s 700+ new names coined in the AJH, while he and a few personal followers actively promote their usage. We believe that suppression of the name *Spracklandus*, and all issues of AJH, is the only effective way to bring this contentious and confusing issue to resolution. The plenary power available under Article 81.1 of the Code exist specifically to allow the Commission to make rulings in individual cases that disturb stability and cause confusion, whether the works are Code-compliant or not. We maintain that it is in the interest of nomenclatural stability, not only for herpetology, but for all of zoological taxonomy, that the plenary power be invoked to declare the works in AJH unavailable, regardless of any narrow interpretation of their technical Code-compliance. We present our arguments for rejection of the validity of AJH in the following commentary. In view of the wide-reaching implications of this case for all of zoology, and reflecting the deep and broad-based community concern over these issues, our contributing authors include 70 global scientific leaders and accomplished amateurs from a wide variety of zoological disciplines.

2. When it comes to identifying and naming taxa, herpetology has embraced the use of possibilities created by emerging technologies in desktop-publishing, open-source internet-based publishing, searchable online digital libraries and databases, and internet search engines (e.g. Chelonian Conservation and Biology, www.chelonian.org; Herpetological Conservation and Biology, www.herpconbio.org; Amphibian Species of the World, <http://research.amnh.org/herpetology/amphibia/index.html>; The Reptile Database, www.reptile-database.org; Turtle Taxonomy Working Group, www.iucn-tftsg.org/checklist). Along with this acceleration and expansion of scientific communication, the last 20 years have witnessed unprecedented increases in the knowledge of reptile phylogeny and species

diversity, triggered by the ever-increasing application of molecular data, new analytical tools and conceptual advances, with the resulting taxonomic adjustments affecting most groups. Unfortunately, these advances in online informatics and desktop publishing have also created easier mechanisms for some individuals to bypass scientific publishing conventions in order to create self-published, poorly justified, and questionable nomenclatural and taxonomic acts, without the quality control of peer-review and editorial oversight. Case 3601, concerning the validity of the name *Spracklandus* and issue 7 of AJH, the journal in which it was presented, illustrates the potential of technological progress and internet-based data-mining by some individuals to enable the rapid production and wide distribution of this type of work, and with it the accelerating threats of destabilization and confusion that nomenclatural and taxonomic systems are facing as a result. Although rogue taxonomic journals such as AJH have appeared in the past and continue to appear (see Raghavan et al., 2014), it is our contention that it is incumbent on the scientific community and the Commission (ICZN) to protect and defend the integrity of nomenclatural taxonomy and the scientific process, lest both science and the ICZN itself fall victim to the destabilizing impact to nomenclature and taxonomy of the kind generated by individuals such as the originator of Case 3601.

3. Poor quality output is unacceptable in all fields of science, but it is particularly deplorable in taxonomy because it creates persistent nomenclatural instability and confusion, debases proper taxonomic and nomenclatural work, and bypasses accepted and established community standards for scientific inquiry and process. Kaiser et al. (2013) appropriately criticized this type of output, but in response to Kaiser and co-authors, Hoser (2013b) disingenuously and abrasively attempted to justify his own work and defend his actions of naming un-named phylogenetic clades identified in the works of other authors, while at the same time engaging in extensive personal defamatory rhetoric (e.g. Hoser 2013b:12, 15). We fear that unless the Commission addresses this type of divisive approach to taxonomy and nomenclature, and its potential ramifications, by setting a clear precedent to stabilize herpetological nomenclature, comparable practices are likely to surface in other branches of zoological taxonomy. If left unaddressed or validated, further destabilization and confusion are likely to develop, and the ICZN would then find itself facing an onslaught of analogous problems.

4. Case 3601 attempts to confirm the availability of the name *Spracklandus* and validate for the purposes of nomenclature issue number 7 of AJH. By implication, this could be misconstrued as validating the entire run of AJH as an acceptable medium for nomenclatural acts, and with it the many names (currently over 700, at various taxonomic levels) that Hoser created in isolation from (and frequently in conflict with) the global herpetological community. In addition, it would implicitly validate what we consider to be Hoser's disregard for proper scientific conduct and process. While we understand that any vote by the Commission is intended to be narrow in its application (i.e. covering only the specifics of the individual case) and not precedent-setting, we are certain that, given his long and public history of self-promotion, Hoser will interpret a decision in his favor as precedent-setting and comport himself accordingly, including the likely possibility of hundreds more requests to the Commission for validation of his many names. It is for this reason that our comment deliberately reaches beyond the specifics of Case 3601: to pre-empt

claims about the relationship between the Commission and herpetological taxonomists that manipulate the intent of a decision on Case 3601 and do lasting damage to the Commission and its effectiveness in science.

5. Hoser's output threatens to undermine the entire Code-compliant system that underlies nomenclatural stability (Kaiser et al., 2013; Thomson, BZN 71: 133–135). Having already impugned the scientific reputation and credibility of individual taxonomists (e.g. Hoser, 2009, pp. 16–19; Hoser, 2013b pp. 12, 15) and undermined the taxonomic profession itself (by self-publishing in a journal with no evidence of independent peer review), Hoser has triggered unprecedented community reaction and rejection (Kaiser et al., 2013; Thomson, BZN 71: 133–135). The herpetological community has expressed, justified, and implemented its intent to reject usage of Hoser names (e.g. Bates et al., 2013; Measey, 2013; Reynolds et al., 2014), but Hoser has continued to promote his alternative nomenclature and promulgated ever more names, with more issues of the AJH introducing many more new names posted in August 2014. Recent pending ICZN applications regarding Hoser names (Cases 3647 and 3648) and his comments on Taxacom and the ICZN-list online discussion forum have also indicated that his application regarding *Spracklandus* will not be an isolated case.

6. One of the most difficult situations arising from this scenario is the emergence of mutually exclusive, conflicting dual nomenclatures. One is based on accepted scientific principles to ascertain that the production of peer-reviewed taxonomy and nomenclatural acts is based on rigorous and focused analysis and a shared Code of Ethics; this is the method widely supported by the global herpetological and other taxonomic communities. The other is produced in isolation and based largely on apparent misappropriation and misrepresentation of others' work, or occasionally on baseless conjecture, without any notable adherence to acceptable scientific rigor or ethical principles. The ICZN is already aware of specific examples (see Thomson, BZN 71: 133–135), including Hoser's recent pre-emptive but technically flawed attempt to name *Macrochelys* taxa under active study by others (Roman et al., 1999; Echelle et al., 2010; Hoser, 2013a; Turtle Taxonomy Working Group, 2014; Thomas et al., 2014), in egregious disregard of Appendix A:2 of the Code. Developments of the most recent past have shown that the herpetological community is determined to uphold a boycott of Hoser names, and at least the *African Journal of Herpetology* has published an editorial that formalizes this boycott (Measey, 2013). Without action by the ICZN in opposition to Case 3601, we fear that dual nomenclature will be a perpetual problem for herpetological taxonomy.

7. An example of developing dual nomenclature is Hoser's attempted resurrection of three rattlesnake genera (*Aechmophrys*, *Caudisona*, and *Uropsophus*) from the synonymy of *Crotalus*, along with the description of new genera and subgenera (Hoser, 2009; Wüster & Bérnills, 2011). No data were presented to support these proposed changes, and Zaher et al. (2009) recommended that they not be followed. Despite this, the Brazilian Society of Herpetology unfortunately adopted these changes in their annually updated checklist (Bérnills, 2010; also see Wüster & Bérnills, 2011), triggering a proliferation of dual nomenclature for this medically important group of venomous snakes. This example illustrates how the output from AJH can proliferate and the harm that can potentially result from this dual nomenclature. It should also be clear that it is impossible to determine what to do with the resurrected

names without addressing the new names that were coined at the same time. This is a nomenclatural issue, requiring a complete review of the entire group's nomenclature and its inherent taxonomy to determine how to proceed.

8. In our opinion, the issue at hand is not a narrow question of whether the names proposed in AJH may technically be nomenclaturally available, but how the broader scientific community, and the ICZN specifically, should best address this type of open, repetitive disregard of time-honored nomenclatural and taxonomic practice. A firm and unequivocal decision on this case by the ICZN is necessary to safeguard the scientific integrity and global perception of the closely intertwined fields of zoological taxonomy and nomenclature. Neither the global scientific community nor the ICZN itself should be held hostage now or in the future by individuals adept at web-based data-mining and self-promotion, who circumvent the spirit of the Code, minimally attempt to adhere only to the Code's narrowest technical premises, and pre-empt those who work in compliance with both the Code's Recommendations and its Code of Ethics.

9. Governmental agencies, inter-governmental conventions, NGOs, and the global scientific and conservation communities depend on and value credible scientific and taxonomic work by the herpetological and wider taxonomic communities. Important in this regard is the expectation of reasonable nomenclatural stability and a precautionary approach to recommended taxonomic and nomenclatural changes. A decision in support of Case 3601 would implicitly sustain a dual nomenclature for many taxonomic groups of reptiles, and likely facilitate future chaos for additional taxonomic groups. The confusion stemming from such a dual nomenclature would cause many problems, ranging from legislative difficulties (e.g. during the development and enforcement of species management and conservation strategies or for trade regulations and quotas), to confusion over the identification and management of venomous species in a medical context (Williams et al., 2006).

10. We are not advocating that the practice of zoological taxonomy be restricted to scientific professionals—we welcome and encourage taxonomic and nomenclatural contributions from serious amateurs, naturalists, and biodiversity enthusiasts, as many of us are. However, such work needs to be original, acceptably published, and Code-compliant (including both the general Recommendations and the Code of Ethics), with a justified scientific underpinning. Additionally, we advocate strongly for quality-controlled peer-reviewed publishing as the only appropriate 'best practice' for new taxonomy and nomenclature (Turtle Taxonomy Working Group, 2007, 2014; Kaiser et al., 2013; Kaiser, 2014).

11. There are some similarities between the nomenclature presented in the AJH and that of Wells & Wellington (1983, 1985), the subject two decades ago of Case 2531 (BZN 44: 116–121) and several comments (e.g. BZN 45: 52–54, 145–153). This point has also been raised anecdotally on the ICZN online discussion forum and Taxacom, but we consider these cases to be dissimilar in important ways. The issues of concern in the Wells & Wellington papers were largely taxonomic and regionally focused (BZN 48: 337–338), whereas the issues with the AJH are primarily nomenclatural, ethical, and global. It has been argued in the past that the Wells & Wellington papers were also unethical and derived from substandard taxonomic practices (BZN 48: 337–338), but they were published prior to the existence of the Internet, and were not disseminated at the scale of AJH; nor did Wells & Wellington use their own self-edited

output as an opportunity to defame their critics in herpetology or professionals in other walks of life, as Hoser has done repeatedly, in breach of Appendix A:5 (e.g. Hoser, 2009, pp. 13, 16–19; Hoser, 2013b, pp. 12, 15), or to make political statements (e.g. Hoser, 2013a, p. 55) or to self-publicize business and other interests (e.g. Hoser, 2009, pp. 6, 9). In their ruling on Case 2531 the Commission concluded that the aim of that application would be best achieved by leaving the issue to taxonomic specialists to be settled through usage. In the present Case 3601, if the Commission were to consider the issue to be primarily taxonomic, this would have far-reaching destabilizing consequences for all of zoological nomenclature and taxonomy, consequences not readily resolved through usage.

12. Hoser's actions and abrasive comportment via AJH (citations in paragraph above) have created a highly contentious environment for zoological nomenclature and its intrinsic relationship to taxonomy. If the Commission upholds his request for validation of AJH issue 7, the greater scientific community and, importantly, future young scientists are likely to be misled into believing that output such as the AJH is an acceptable scientific medium for bringing knowledge to the public realm. Given also that Hoser's papers in AJH are, in our opinion, seriously flawed, unedited (evidenced by many uncorrected spelling errors), often potentially libellous and off-topic in content, and usually failing to present any measure of pertinent evidence to provide stability for the names they produce, their implicit endorsement by the Commission, if *Spracklandus* and AJH were to be validated, would in our opinion bring taxonomic science, zoological nomenclature, and the Code itself into unfortunate disrepute. Most herpetologists and many from other disciplines reject Hoser's output, as many have turned away from the ICZN online discussion forum, where Hoser has also been vocal and defamatory, including to ICZN Commissioners. In our opinion, this can in turn lead to an unwelcome erosion of the authority of the nomenclatural rules scientists have been following for over a century.

13. We believe Case 3601 represents a tipping-point in terms of where taxonomic science and its relationship with the Code might be headed. This relationship is currently being jeopardized by the actions of a single individual, which, if condoned or validated, are sure to further enable and facilitate others to follow. We therefore reiterate and support the proposal to suppress the entire run of AJH, as outlined in Proposals 9(1)b and 9(3) of Thomson (BZN 71: 134), inclusive of its most recent issues. Additionally, we urge that all scientists suspend the use of Hoser's nomenclature in order to avoid confusion. We contend that all taxa affected by new Hoser names contained in these issues of AJH be subject to prevailing usage under article 82.1 of the Code. Hence, no changes in order to use Hoser names should be formally made to their existing nomenclature while the Commission deliberates. This will prevent the names proposed in the AJH from coming into any further usage until such time that a Decision may be made. Should authors or editors feel a need to justify continued use of prevailing names for taxa affected by this proposal, they may cite Kaiser et al. (2013), Kaiser (2014), this comment, and Article 82.1 of the Code.

14. In summary, we contend that:

(1) the self-produced works by Raymond Hoser under the title of *Australasian Journal of Herpetology*, and the proliferation of names therein, are so contentious that they destabilize and cause confusion in the entire system of nomenclature, and undermine the scientific reputation and credibility of the discipline of taxonomy;

(2) the scope and reach of Hoser's nomenclatural output are made possible by relatively recent advances in internet communication, electronic publishing, and the use of social media, added to prior advances in desktop-publishing technologies. These tools are easily accessible across all biological fields, with concomitant risk of their deliberate misuse by some individuals. Thus, the nomenclatural issues we face in herpetology are already spreading and occurring in other branches of taxonomy and nomenclature. If left unchecked they will confound not merely nomenclatural stability in herpetology but taxonomic science as a whole;

(3) even though the Commission may be disinclined to rule on the basis of the recommended Code of Ethics contained in the Code, Hoser's demonstrated disregard for acceptable ethical practice is a key driver for many in both the herpetological community and other branches of zoology to categorically reject his writings and names, and support the retention of scientifically and ethically sound nomenclature. Without decisive pre-emptive action by the Commission, under Article 81.1 of the Code, the development of a dual system of nomenclature would appear inevitable, an outcome we regard as counter-productive in terms of Code-compliance.

15. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to declare the *Australasian Journal of Herpetology* (AJH) Volumes 1–24 unavailable for nomenclatural purposes; specifically pertaining to Case 3601, this would include issue 7 of AJH, thereby rendering the name *Spracklandus* unavailable;
- (2) to place on the Official Index of Rejected Works in Zoology issues 1–24 of the *Australasian Journal of Herpetology*, as ruled in (1) above;
- (3) to make a clear and decisive statement that the accepted scientific and ethical principles of zoological nomenclature, as recommended in the ICZN Code of Ethics, should be adhered to, and when evidence of failure to adhere to these principles leads to the matter being referred to the Commission for a decision, the Commission may apply and interpret the provisions of the Code of Ethics and determine whether it is appropriate to give a ruling.

These requests supersede those contained in three prior comments published by our co-authors (Thomson, BZN 71: 133; Wüster et al., BZN 71: 37–38; Kaiser, BZN 71: 30–35).

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Comment on *Allosaurus* Marsh, 1877 (Dinosauria, Theropoda): proposed conservation of usage by designation of a neotype for its type species *Allosaurus fragilis* Marsh, 1877

(Case 3506; see BZN 67: 53–56; 71–72; 178; 255–256; 332)

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We appreciate the supportive comments by Demirjian and by Loewen & Chure to designate USNM 4734 as the name bearer for the theropod dinosaur *Allosaurus fragilis* in place of the non-diagnostic YPM 1930. There are a few points raised that we wish to comment on:

1. Loewen and Chure are of the opinion that the premaxilla must belong to a different individual based on size comparison, although no supporting evidence is presented.

2. Marshall Felch, who collected USNM 4734, did so by what he called the ‘block method’, which he described in letters to Marsh, his employer: ‘The only way that I can do anything on the Carnivore (No 5) is by the block method. I think I can diagram and map so you will find how they go together.’ (June 15, 1884). ‘I take a strip at a time, with the seams – starting each strip from the outer edge (South Side) and working back as far as I think any bones of No. 5 are liable to be found which makes the breast of my strip now nearly 20 feet wide.’ (July 5, 1884). The removal of sandstone blocks along their joints (‘seams’ of Felch) was used from 1884 onwards. The pattern of the joints can be seen in plate 4 of Gilmore (1914), which shows the articulated *Stegosaurus* skeleton that was collected a few meters from USNM 4734 (skeleton 7). That Felch did collect USNM 4734 by the block method is stated in a letter ‘By the last of next week if we have good luck all can be shipped including No. 7 (*Allosaurus*) as we have it most all removed from its bed and part of the blocks dressed ready to group. . . but by great care we shall be able to get the blocks to match well – and all of the fragments saved and marked so as to locate without difficulty. . . [W]hat we found as far as the breaks show etc. – but we knew there will be found several perfect dorsals – ribs – one whole fore foot – all the cervicals in splendid condition – and some of the skull – how much we cannot tell as only a portion is exposed in a large block ’ (Oct. 28, 1884). Note that Felch clearly states that the skull parts were collected intact as a large block.

3. Charles Gilmore (1920, fig. 16) clearly refers the premaxilla to USNM 4734 in his detailed description of the skeleton. He did so because it was found associated with many of the other cranial bones during completion of the preparation of the skeleton at the National Museum of Natural History. Preparation of the specimen was begun in 1915: ‘the preparation of a fairly complete skeleton of *Allosaurus fragilis* was well under way.’ (Rathbun, 1916, p. 64). Work was completed the following year: ‘The skeleton of *Allosaurus fragilis*, mentioned in the last report, was entirely freed

from the matrix. . . The skull and jaws have been skillfully restored, articulated and mounted. . . ' (Rathbun, 1917, p. 58). That skull was figured by Gilmore (1920, fig. 1, pl. 3) and he was clear that the dentary used in the reconstruction belonged to a different specimen (USNM 8335). Gilmore in fact, was always clear when multiple specimens were used in a mount (e.g. *Camptosaurus* Gilmore 1912, p. 691; *Stegosaurus* Gilmore 1919, pp. 388–389). There is therefore no reason to doubt the association of the premaxilla with the rest of the skull.

4. Demirjian (2010) citing Chure's (2000) unpublished dissertation that the skull was reconstructed too short is correct. Chure (2000, p. 174–176) has described many of the problems with the skull, but we add several more that affect the visible relative size of the premaxilla and which may have misled Loewen & Chure (2010). First we note that the nasals have a distorted dorsal arch, which effectively shortens the snout. Some of this distortion was removed in the drawing of the left nasal by Gilmore (1920, fig. 9). This distortion is great enough that the real left nasal does not articulate properly with the left, real maxilla. The effect is that had the distal end of the dorsal or nasal ramus of the maxilla been complete, it would have projected into the upper portion of the antorbital fenestra. Despite the distortion of the nasal, the real, right premaxilla was articulated with the premaxillary process of the right nasal. To accommodate a shorter snout, the right maxilla was reconstructed a little shorter than the left, real one. In addition, so as not to reduce asymmetry between the left and right side of the reconstructed skull, almost 25% of the posterior half of the real premaxilla is hidden by plaster of the reconstructed maxilla, whereas on the left side, plaster of the reconstructed premaxilla overlaps a part of the real maxilla. In conclusion, we believe the evidence shows that the premaxilla associated with USNM 4734 does indeed belong to that specimen, and therefore is part of the proposed neotype for *Allosaurus fragilis*.

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Comment on proposed replacement of the holotype of *Basilosaurus kochii* Reichenbach, 1847 (currently *Zygorhiza kochii*; Mammalia, Cetacea) by a neotype (Case 3611; see BZN 70: 103–107)

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Uhen (BZN 70: 103–107) requests designation of a neotype to replace the existing holotype of the late Eocene archaeocete *Basilosaurus kochii* Reichenbach, 1847. I ask the Commission to decline this request.

The history of *Basilosaurus kochii* Reichenbach, 1847, is outlined here, following Kellogg (1936) and others. Harlan (1834) named the genus *Basilosaurus* for ‘a vertebra of enormous dimensions’ from Louisiana in the United States but provided no species name. Owen (1839) recognized *Basilosaurus* to be a mammal rather than a reptile and proposed the replacement name *Zeuglodon*. Owen (1841) then named *Zeuglodon cetoides* based on dental remains from the Ocala Limestone Formation (upper Jackson Group strata of late Eocene, middle to late Priabonian age), in Clark County, Alabama (Kellogg, 1936; see also Jaramillo & Oboh-Ikuenobe, 1999). *Zeuglodon* is a junior synonym of *Basilosaurus*, and the name *Basilosaurus cetoides* is now widely used for the largest archaeocete from upper Jackson Group strata in Alabama. Synonyms of *Basilosaurus cetoides* include *Zeuglodon harlani* De Kay, 1842; *Hydrargos sillimanii* Koch, 1845; *Zeuglodon macrospondylus* Müller, 1849; and *Alabamornis gigantea* Abel, 1906. The type specimen of *Basilosaurus cetoides* is generally regarded as Philadelphia Academy of Natural Sciences 12944A, a lumbar or anterior caudal vertebral centrum measuring 36 cm in length and 18 cm in breadth (Kellogg, 1936; Uhen, 2013).

Basilosaurus kochii was named by Reichenbach (in Carus, 1847), based on a specimen from the Ocala Limestone (upper Jackson Group strata of late Eocene, middle to late Priabonian age) near Clarksville, Alabama. The type, variously called a ‘palate,’ ‘smaller palate,’ or ‘small skull,’ was illustrated by Reichenbach (in Carus, 1847, plate 2, figs. 3–4; see also Müller, 1849, plates 3–5). Reichenbach distinguished *Basilosaurus kochii* from *Basilosaurus cetoides* on the basis of its small size. Synonyms of *Zygorhiza kochii* include *Zeuglodon hydrarchus* Carus, 1849; and *Zeuglodon brachyspondylus minor* Müller (1851). True (1908) proposed the genus *Zygorhiza* for *Zeuglodon brachyspondylus minor* Müller. The type specimen of *Zygorhiza kochii* is in Museum für Naturkunde Berlin [MNB] Ma 43248 (previously 15324), a posterior cranium with occipital condyles that measure 11–12 cm across their outer margins (Müller, 1849, plate 3). Lumbar vertebral centra of *Zeuglodon brachyspondylus minor* are in the order of 6 cm long and 7 cm in breadth (Müller, 1849).

Finally, a medium-sized archaeocete, ‘*Zeuglodon*’ *brachyspondylus*, was named by Müller (1849) from Washington County, Alabama. This too came from upper Jackson Group strata of late Eocene, middle to late Priabonian age, and was distinguished by its large but anteroposteriorly short lumbar vertebrae. The type specimen designated by Gingerich (2007) is the lumbar vertebra illustrated in

Müller's (1849) plate 20, row 2, number 6, which Kellogg (1936) listed as an unnumbered MNB specimen that measures 19 cm in length and 19 cm in breadth. There is no cranium known for '*Zeuglodon*' *brachyspondylus*. Kellogg (1936) placed '*Zeuglodon*' *brachyspondylus* in the genus *Pontogeneus* based on *Pontogeneus priscus* Leidy (1852).

Pontogeneus priscus Leidy (1852) and *Cynthiacetus maxwelli* Uhen (2005) may be synonyms of *Zeuglodon brachyspondylus* or they may represent a fourth (and possibly fifth) upper Jackson Group lineage. Both are late Eocene, middle to late Priabonian in age. *Pontogeneus* is from the Jackson Formation of Caldwell Parish, Louisiana, and *Cynthiacetus* is from the Yazoo Clay of Hinds County, Mississippi. The one described centrum of a lumbar vertebra of *Cynthiacetus maxwelli* measures 8 cm in length and 12 cm in breadth (Uhen, 2005). The position of this vertebra in the lumbar column is uncertain, and it is missing anterior and posterior epiphyses.

Uhen (BZN 70: 103–107, paragraph 10) argues that the lack of a neotype for *Zygorhiza kochii* exacerbates ongoing difficulty in understanding cetacean diversity by preventing resolution of possible synonymy between *Zygorhiza kochii* and the related species *Dorudon serratus* Gibbes (1845) and *Chrysocetus healyorum* Uhen & Gingerich (2001). The type specimen of *Dorudon serratus* is from the Harleyville Formation of Berkeley County in eastern South Carolina, which is early late Eocene, early Priabonian in age (Uhen, 2004, 2013). It differs from all upper Jackson Group basilosaurids in being older geologically (early Priabonian versus middle to late Priabonian), and in coming from a different geographic province (Atlantic Coastal Plain versus Gulf Coast bordering the Gulf of Mexico). Further, *Dorudon serratus* is larger than *Zygorhiza kochii* and has more robust vertebrae and other comparable skeletal elements (Uhen, 2004, 2013). The type specimen of *Chrysocetus healyorum* is from the Pregnall Member of the Tupelo Bay Formation of Orangeburg County in eastern South Carolina, which is early late Eocene, early Priabonian in age (Uhen, 2013). Here again, it differs from all Jackson Group basilosaurids in being older geologically (early Priabonian versus middle to late Priabonian) and in coming from a different geographic province (Atlantic Coastal Plain versus Gulf Coast). Further, *Chrysocetus healyorum* is smaller than *Zygorhiza kochii* and it has more gracile vertebrae and other comparable skeletal elements (Uhen & Gingerich, 2001; Uhen, 2004, 2013).

Uhen (BZN 70: 103–107, paragraph 11) requests that the International Commission on Zoological Nomenclature use its plenary power to designate U. S. National Museum [USNM] specimen 11962 as a neotype of *Zygorhiza kochii* to replace MNB Ma 43248. The proposed neotype USNM 11962 comes from Choctaw County, Alabama, 50 km along strike northwest of the type locality, and from the same upper Jackson Group strata as the type. USNM 11962 is a more complete and better preserved specimen, however the holotype MNB Ma 43248 and the proposed neotype USNM 11962 both represent the same small basilosaurid species from upper Jackson Group strata. *Zygorhiza kochii*, like all species, should be thought of as a population of individual animals represented by a collection of known specimens. Replacement of the existing holotype by a neotype will not solve any pressing problem, nor will it change the collection of known specimens of *Zygorhiza kochii* in any way. USNM 11962 is available for comparison whether or not it is a neotype, and the existing holotype MNB 43428 identifies the collection of known specimens of

the small upper Jackson Group basilosaurid species *Zygorhiza kochii* as well as the proposed neotype USNM 11962.

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Corrigendum

Case 3658. *Calyptorhynchus baudinii* Lear, 1832 (Aves, CACATUIDA): proposed conservation of usage by designation of a neotype (BZN 71: 170–178)

On pp. 176–177, the holotype no. for *Calyptorhynchus latirostris* was incorrectly given as A6436. The correct number is A6463.

The corrected proposal (3) on p. 177 should read:

- (3) to place on the Official List of Specific Names in Zoology the name *latirostris* Carnaby, 1948, as published in the binomen *Calyptorhynchus latirostris* and as defined by holotype A6463 in the Western Australian Museum.

OPINION 2351 (Case 3575)

***Haltica undulata* Kutschera, 1860 (currently *Phyllotreta undulata*, Insecta, Coleoptera, CHRYSOMELIDAE): precedence given over *Haltica bivittata* Waterhouse, 1838 (currently *Phyllotreta bivittata*)**

Abstract. The Commission has conserved the name *Phyllotreta undulata* (Kutschera, 1860) for a common and wide spread flea-beetle species (CHRYSOMELIDAE, GALERUCINAE), by giving it precedence over the unused older name *P. bivittata* (Waterhouse, 1838), whenever these names are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Coleoptera; CHRYSOMELIDAE; GALERUCINAE; *Phyllotreta*; *P. undulata*; Eurasia; North America; Australia; Pacific region.

Ruling

- (1) Under the plenary power precedence is hereby given to the name *Phyllotreta undulata* (Kutschera, 1860) for a common and widespread flea-beetle species (CHRYSOMELIDAE, GALERUCINAE) by giving it precedence over the unused older name *P. bivittata* (Waterhouse, 1838), whenever these names are considered to be synonyms.
- (2) The name *undulata* Kutschera, 1860, as published in the binomen *Haltica undulata* is hereby placed on the Official List of Specific Names in Zoology, with the endorsement that it is to be given precedence over the name *bivittata* Waterhouse, 1838, as published in the binomen *Haltica bivittata*, whenever the two are considered to be synonyms.
- (3) The name *bivittata* Waterhouse, 1838, as published in the binomen *Haltica bivittata*, is hereby placed on the Official List of Specific Names in Zoology with the endorsement that it is not to be given priority over the name *undulata* Kutschera, 1860, as published in the binomen *Haltica undulata*, whenever the two are considered to be synonyms.

History of Case 3575

An application to conserve the name *Phyllotreta undulata* (Kutschera, 1860) for a common and widespread flea-beetle species (CHRYSOMELIDAE, GALERUCINAE), by giving it precedence over the unused older name *P. bivittata* (Waterhouse, 1838) was received from Chris Reid (*Entomology, Australian Museum, Sydney, NSW, Australia*), Roger Booth (*Department of Entomology, Natural History Museum, U.K.*) and Manfred Döberl (*Seeweg 34, 93326 Abensberg, Germany*) on 12 September 2011. After correspondence the Case was published in BZN **69**: 24–28 (March 2012). The title, abstract and keywords of the Case were published on the Commission's website. A comment in support was published in BZN **70**(3): 201. The Case was sent for vote on 5 June 2014.

Decision of the Commission

At the close of the voting period on 5 September 2014 the votes were as follows:

Affirmative votes – 22: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Ng, Pape, Patterson, Rosenberg, Winston, Yanega, Zhang and Zhou.

Negative votes – 1: van Tol.

Pyle and Štys were on leave of absence.

Original references

The following are the original references to the names placed on the Official Lists by the ruling given in the present Opinion:

Haltica undulata, Kutschera, 1860, *Wiener Entomologische Monatschrift*, **10**(4): 301

Haltica bivittata, Waterhouse, 1838, *Transactions of the Entomological Society of London*, **2**(2): 133.

OPINION 2352 (Case 3531)***Sematura* Dalman, 1825 (Insecta, Lepidoptera, SEMATURIDAE): precedence over *Mania* Hübner, 1821 not given**

Abstract. The Commission has not conserved the generic name *Sematura* Dalman, 1825 (Lepidoptera, SEMATURIDAE), a well-established name for a genus of moths widespread in the Neotropical region, threatened by its rarely used senior subjective synonym, *Mania* Hübner, 1821, which dropped out of use because it was incorrectly considered to be an unavailable homonym. The Commission did not give *Sematura* Dalman, 1825 precedence over *Mania* Hübner, 1821. The name *Mania* Hübner, 1821 is placed on the Official List of Generic Names in Zoology.

Keywords. Nomenclature; taxonomy; Insecta; Lepidoptera; SEMATURIDAE; *Sematura*; *Mania*; *Nothus*; *Sematura lunus*; *Mania empedoclaria*; moths; Neotropical Region.

Ruling

- (1) The Commission did not use its plenary power to give the name *Sematura* Dalman, 1825 precedence over the name *Mania* Hübner, 1821, whenever the two are considered to be synonyms.
- (2) The name *Mania* Hübner, 1821 (gender: feminine), type species by monotypy *Lars empedoclaria* Hübner, [1819] is hereby placed on the Official List of Generic Names in Zoology.

History of Case 3531

An application to conserve the generic name *Sematura* Dalman, 1825, for a genus of Neotropical moth (Insecta, Lepidoptera, SEMATURIDAE) was received from Matthew J.W. Cock (*CABI, Delémont, Switzerland*) and Gerardo Lamas (*Departamento de Entomología, Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Lima-14, Peru*) on 27 July 2010. After correspondence the Case was published in BZN 68: 184–189 (September 2010). The title, abstract and keywords of the Case were published on the Commission's website. An adverse comment was published in BZN 69: 61–62. The Case was originally sent for vote on 1 June 2013 (VP 9). A majority of Commissioners voted FOR the Case (14 For, 9 Against), but it failed to meet the two-thirds majority required for approval. In accordance with the bylaws, the case was sent for a revote on 5 June 2014.

Decision of the Commission

At the close of the voting period on 5 September 2014 the votes were as follows:

Affirmative votes – 14: Ballerio, Brothers, Bouchet, Grygier, Halliday, Harvey, Krell, Pape, Rosenberg, Winston, Yanega, van Tol, Zhang and Zhou.

Negative votes – 8: Alonso-Zarazaga, Bogutskaya, Fautin, Kojima, Kottelat, Kullander, Ng and Patterson.

Lamas abstained.

Pyle and Štys were on leave of absence.

Voting AGAINST, Alonso-Zarazaga said that both names had very limited use, had never been revised, and were of no particular interest, and therefore priority must stand. Also voting AGAINST Kojima said that judging from the statements in this proposal, he did not consider that the name *Sematura* Dalman, 1825 proposed to be conserved, had a sufficiently high profile to be conserved under the plenary power.

Original references

The following is the original reference to the name placed on the Official List by the ruling given in the present Opinion.

Mania, Hübner, 1821, *Index exoticorum Lepidopterorum, in foliis 244 a Jacobo Hübner hactenus effigiatorum; adjectis denominationibus emendatis, tam communioribus quam exactioribus*. 7 pp. The author, Augsburg, p. [3].

OPINION 2353 (Case 3563)***Pachylemur* Lamberton, 1948 (Primates, LEMURIDAE): generic name conserved**

Abstract. The Commission has conserved the name *Pachylemur* Lamberton, 1948 (Primates, LEMURIDAE) for a genus of subfossil Madagascan lemurs, by suppressing the senior subjective synonym *Palaeochirogalus* Grandidier, 1899 and by designating a type species for the genus *Pachylemur* Lamberton. *Palaeochirogalus* Grandidier has never seen any substantial usage whereas *Pachylemur* Lamberton, 1948 is in universal use; however, *Pachylemur* Lamberton, 1948 is unavailable because no type species was designated in the original publication. Filhol (1874) previously used the name *Pachylemur* for a ‘groupe’ of Paleogene primates; the Commission has concluded that this name, under either Filhol’s or Palmer’s (1904) authorship and, in either case, ambiguous as regards availability, should be formally suppressed at the genus-group level to prevent confusion.

Keywords. Nomenclature; taxonomy; LEMURIDAE; *Palaeochirogalus*; *Pachylemur*; *Pachylemur insignis*; lemur; Madagascar.

Ruling

(1) Under the plenary power:

- (a) the following generic names are hereby suppressed for the purposes of both the Principle of Priority and the Principle of Homonymy:
 - (i) *Pachylemur* Filhol, 1874;
 - (ii) *Pachylemur* Palmer, 1904;
- (b) the generic name *Pachylemur* Lamberton, 1948 is given precedence over *Palaeochirogalus* Grandidier, 1899, whenever these names are considered to be synonyms;
- (c) *Pachylemur* Lamberton, 1948 is ruled to be available from its original publication;
- (d) all previous type species fixations for *Pachylemur* Lamberton, 1948 are hereby set aside and *Lemur insignis* Filhol, 1895 is hereby designated as its type species.

(2) The following names are hereby placed on the Official List of Generic Names in Zoology:

- (a) *Pachylemur* Lamberton, 1948 (gender: masculine); with authorship as ruled in (1)(c) above and with the type species *Lemur insignis* Filhol, 1895, as ruled in (1)(d) above, with the endorsement that it is to be given precedence over *Palaeochirogalus* Grandidier, 1899, whenever these names are considered to be synonyms;
- (b) *Palaeochirogalus* Grandidier, 1899 (gender: masculine); type species *Palaeochirogalus jullyi* Grandidier, with the endorsement that it is not to be given priority over *Pachylemur* Lamberton, 1948, whenever these names are considered to be synonyms.

- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
- (a) *insignis* Filhol, 1895, as published in the binomen *Lemur insignis*, specific name of the type species of *Pachylemur* Lamberton, 1948, as ruled in (1)(d) above;
 - (b) *jullyi* Grandidier, 1899, as published in the binomen *Palaeochirogalus jullyi*, specific name of the type species of *Palaeochirogalus* Grandidier, 1899.
- (4) The following names are hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology:
- (a) *Pachylemur* Filhol, 1874, as suppressed in (1)(a)(i) above;
 - (b) *Pachylemur* Palmer, 1904, as suppressed in (1)(a)(ii) above;

History of Case 3563

An application to conserve the name *Pachylemur* Lamberton, 1948 (Primates, LEMURIDAE) for a genus of subfossil Madagascan lemurs by suppressing the senior subjective synonym *Palaeochirogalus* Grandidier, 1899 and by designating a type species for the genus *Pachylemur* Lamberton was received from Jelle Zijlstra (*Rijnzichtweg 153, 2342 AZ Oegstgeest, The Netherlands*), Colin Groves (*School of Archaeology & Anthropology, Australian National University, Canberra, Australia*) and Alex Dunkel (*7305 Calibre Park Dr. #102, Durham, NC, U.S.A.*) on 19 May 2011. After correspondence the Case was published in BZN 68: 275–280 (December 2011). The title, abstract and keywords of the Case were published on the Commission's website. No comments were received on this Case. The Case was originally sent for vote on 1 September 2013. The voting results were as follows: 12 Commissioners voted FOR, 5 Commissioners voted AGAINST, 3 Commissioners ABSTAINED, 4 Commissioners SPLIT their vote. A majority of Commissioners voted FOR the Case, but it failed to meet the two-thirds majority required for approval.

Voting FOR, Kojima said that the authors should have clearly mentioned whether *Pachylemur* Filhol, 1874 and *Pachylemur* Palmer, 1904 were available or unavailable. SPLITTING his vote Alonso-Zarazaga said that the Case had been presented without a properly worked out taxonomic basis. It should have been presented again only when the proposed morphological and genetic studies of the cryptic species recognised to exist in the genus *Pachylemur* are carried out and if this study could not solve the existing nomenclatural conflicts. The reference given by the authors for Filhol's paper was incomplete; every article in this journal having its own pagination, the number of the article (4) should have been mentioned. Filhol's concept of 'type zoologique' corresponded to what we today call a taxon. After having read the original paper, he considered that the name *Pachylemur* had been proposed for a group of genera, more or less corresponding to a 'supergenous', not for a family-group taxon, since it was given in the singular, latinized and italicized, while all the family-groups he used were written in the plural, in French and in Roman type. He explained that there was nothing in Articles 11, 12 and 30 precluding the creation of 'supergenera', since the definition of genus-group in Article 11.8 does not mention any mandatory rank or a limited number of these. Included ranks are mentioned only in Article 42.1, but it does not peremptorily exclude any further rank. Moreover, Filhol did not use this name in any other part of his work, while still using as valid

such names included in this ‘supergenous’ as *Paleolemur betillei* or *Adapis magnus*. If considered to be available as a genus, one of these two species would become its type species. In the first case it would become a junior objective synonym of *Paleolemur* Delfortrie, 1873; in the second, it would be a senior objective synonym of *Leptadapis* Gervais, 1876, adding thus to the general conundrum. That is why he considered *Pachylemur* should be suppressed. However, he opposed the suppression of *Palaeochirogalus*, which is based on another type species, and which could be considered in the future a valid genus. He said he supported reversal of precedence instead, this name remaining available if needed, and he proposed that the Commission take action on this on its own initiative under Articles 78.2.3 and 83 to avoid losing a good name for no valid reason; he urged the Secretariat to start the appropriate procedure. Also SPLITTING his vote Harvey commented that he agreed with the suggestion to suppress the names *Pachylemur* Filhol, 1874 and *Pachylemur* Palmer, 1904, which would protect the name in current use. ABSTAINING, Lamas said that he felt that he could not vote either for or against the proposals of the authors, as not enough information had been given. Also ABSTAINING, Ng said that he was not completely comfortable with this proposal as it might be better for the authors to ask that the first and oldest use of the name *Pachylemur* be credited.

In accordance with the bylaws, the case was sent for a revote on 3 June 2014 and included two sets of proposals. Original proposals (Set A) and alternative proposals (Set B) are both repeated below.

SET A (2nd round)

The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power:
 - (a) to suppress the following generic names for the purposes of both the Principle of Priority and Principle of Homonymy;
 - (i) *Pachylemur* Filhol, 1874;
 - (ii) *Pachylemur* Palmer, 1904;
 - (b) to suppress the generic name *Palaeochirogalus* Grandidier, 1899 for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
 - (c) to rule that the name *Pachylemur* Lamberton, 1948 is available from its original publication;
 - (d) to set aside all previous type species fixations for *Pachylemur* Lamberton, 1948 and designate *Lemur insignis* Filhol, 1895 as the type species;
- (2) to place on the Official List of Generic Names in Zoology the name *Pachylemur* Lamberton, 1948, type species *Lemur insignis* Filhol, 1895, as ruled in (1)(c) and (1)(d) above;
- (3) to place on the Official List of Specific Names in Zoology the name *insignis* Filhol, 1895, as published in the binomen *Lemur insignis*, specific name of the type species of *Pachylemur* Lamberton, 1948, as ruled in (1)(d) above.
- (4) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the following names:
 - (a) *Pachylemur* Filhol, 1874, as suppressed in (1)(a)(i) above;
 - (b) *Pachylemur* Palmer, 1904, as suppressed in (1)(a)(ii) above;
 - (c) *Palaeochirogalus* Grandidier, 1899, as suppressed in (1)(b) above.

SET B (1st round) (as proposed by Miguel Alonso-Zarazaga in his comment above):

The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power:
 - (a) to suppress the following generic names for the purposes of both the Principle of Priority and Principle of Homonymy;
 - (i) *Pachylemur* Filhol, 1874;
 - (ii) *Pachylemur* Palmer, 1904;
 - (b) to give the generic name *Pachylemur* Lamberton, 1948 precedence over *Palaeochirogalus* Grandidier, 1899, whenever these names are considered to be synonyms;
 - (c) to rule that the name *Pachylemur* Lamberton, 1948 is available from its original publication;
 - (d) to set aside all previous type species fixations for *Pachylemur* Lamberton, 1948 and designate *Lemur insignis* Filhol, 1895 as the type species;
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Pachylemur* Lamberton, 1948, type species *Lemur insignis* Filhol, 1895, as ruled in (1)(c) and (1)(d) above, with the endorsement that it is to be given precedence over *Palaeochirogalus* Grandidier, 1899, whenever these names are considered to be synonyms;
 - (b) *Palaeochirogalus* Grandidier, 1899, with the endorsement that it is not to be given priority over *Pachylemur* Lamberton, 1948, whenever these names are considered to be synonyms;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *insignis* Filhol, 1895, as published in the binomen *Lemur insignis*, specific name of the type species of *Pachylemur* Lamberton, 1948, as ruled in (1)(d) above;
 - (b) *jullyi* Grandidier, 1899, as published in the binomen *Palaeochirogalus jullyi*, specific name of the type species of *Palaeochirogalus* Grandidier, 1899;
- (4) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the following names:
 - (a) *Pachylemur* Filhol, 1874, as suppressed in (1)(a)(i) above;
 - (b) *Pachylemur* Palmer, 1904, as suppressed in (1)(a)(ii) above;

Decision of the Commission

At the close of the voting period on 3 December 2014 the votes were as follows:

Set A:

Affirmative votes – 1: Fautin.

Negative votes – 19: Alonso-Zarazaga, Ballerio, Bogutskaya, Brothers, Bouchet, Grygier, Halliday, Harvey, Krell, Kullander, Lamas, Pape, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Kojima split his vote: abstain (1)(a) and (1)(c), against (1)(b) and for (1)(d).

Kottelat, Ng, Patterson and Pyle and were on leave of absence.

Set B:

Affirmative votes – 17: Alonso-Zarazaga, Ballerio, Bogutskaya, Brothers, Grygier, Halliday, Harvey, Krell, Kullander, Lamas, Pape, Rosenberg, Štys, Winston, Yanega, Zhang and Zhou.

Negative votes – 3: Bouchet, Fautin and van Tol.

Kojima split his vote: abstain (1)(a) and (1)(c) and for (1)(b) (1)(d).

Kottelat, Ng, Patterson and Pyle and were on leave of absence.

SPLITTING his vote, Kojima said that the authors should have clearly stated whether *Pachylemur* Filhol, 1874 and *Pachylemur* Palmer, 1904 were available or unavailable before they had asked the Commission to use its plenary power to suppress the two generic names; or the authors first could have asked the Commission to use its specific power to list *Pachylemur* Filhol, 1874 and *Pachylemur* Palmer, 1904 as available names and then they could have asked the Commission to use its plenary power to suppress the two generic names. He added that the synonymy of *Palaeochirogalus* Grandidier, 1899 and *Pachylemur* Lamberton, 1948 was a taxonomic decision, and that there were not sufficient nomenclatural grounds to suppress the generic name *Palaeochirogalus* Grandidier, 1899. Voting AGAINST Set A and FOR Set B, Kullander said that *Pachylemur* Filhol was evidently a genus-level name under modern code standards, despite any other terminology used in the original paper. The rest of the application was mostly confusing, e.g. the reference to common names as an argument. He explained that he preferred Alonso-Zarazaga's alternative proposal to end the uncertainties that mammalogists might have had with these animals.

Original references

The following are the original references to the names placed on the Official Lists and Indexes by the ruling given in the present Opinion:

Pachylemur Filhol, 1874, *Annales des Sciences Géologiques*, **5**: 18.

Pachylemur Palmer, 1904, *North American Fauna*, **23**: 494.

Pachylemur Lamberton, 1948, *Bulletin de l'Académie Malgache*, (n.s.) **27**: 7.

Palaeochirogalus Grandidier, 1899, *Bulletin du Muséum National d'Histoire Naturelle*, **5**: 345.
insignis, *Lemur*, Filhol, 1895, *Bulletin du Muséum National d'Histoire Naturelle*, **1**: 12.

jullyi, *Palaeochirogalus*, Grandidier, 1899, *Bulletin du Muséum National d'Histoire Naturelle*, **5**: 345.

NOMENCLATURAL NOTES

Mexican Cretaceous coral species (Cnidaria, Anthozoa, Scleractinia) described as new by Filkorn & Pantoja-Alor (2009), but deemed ‘unpublished’ under the International Code of Zoological Nomenclature: republication of data necessary for nomenclatural availability

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Introduction

The names of the Mexican Cretaceous coral species described as new by Filkorn & Pantoja-Alor (2009) are not available for taxonomic purposes because that work is deemed ‘unpublished’ under the criteria of the International Code of Zoological Nomenclature (the Code; ICZN, 1999, 2012). The original manuscript was in the final stages of preparation for publication as a printed issue of the Boletín of the Instituto de Geología, a well-established series of the Universidad Nacional Autónoma de México (UNAM), when the printed paper version was discontinued and final publication was transferred to CD-ROM (ISSN 0185–5530). The CD-ROM file, in PDF format, also was posted online on the UNAM website, where it is still freely available. Unfortunately, neither the CD-ROM version nor the online version of that 2009 monograph met the Code’s (then) current criteria for publication. The names of the species described as new therein are therefore also deemed to be unpublished and, in consequence, unavailable, and any other information in the monograph potentially affecting nomenclature is similarly affected. Löser (2011, p. 259) first brought this matter to our attention. Specifically, the CD-ROM version did not comply with Article 8.6 of the Code because it did not include a statement that copies of the CD-ROM had been deposited in at least five major publicly accessible libraries named therein and the online electronic version simply did not constitute a published work under Article 9.8. The recent amendment of the Code allowing for electronic publication under some circumstances (ICZN, 2012) did not change the publication status of the 2009 monograph: the CD-ROM still does not comply with (renumbered) Article 8.4.2.2 concerning library deposition and the online electronic version, having been issued before 2012 and not having been registered in Zoobank, does not fulfill (new) Articles 8.5.1 and 8.5.3. The main purpose of the present note is to republish the new specific names and related necessary information in order to fulfil the Code’s requirements for publication and availability, thereby making these names available for use. Besides the 14 new species treated in the present note, Filkorn &

Pantoja-Alor (2009) also presented detailed taxonomic descriptions of 25 other species of Mexican Cretaceous corals, but proposed no nomenclatural acts involving them that require validation here.

Material, repository, abbreviation, geological age and localities

All of the coral specimens utilized for the species descriptions and illustrations of Filkorn & Pantoja-Alor (2009) are housed in the collections of the Museo de Paleontología of the Instituto de Geología, Universidad Nacional Autónoma de México, México D.F. The acronym for that repository is IGM. The abbreviations used for the petrographic thin sections of the type specimens in the list below are: M = Mal Paso; TZ = Turitzio. Other abbreviations: CD = calicular diameter; GCD = greater calicular diameter; LCD = lesser calicular diameter; MP = designation for numbered beds of upper member of Mal Paso Formation.

For each of the new species, its name (explicitly indicated as new), diagnosis and type designation are given in order to meet the conditions for availability specified by Articles 13.1.1, 16.1 and 16.4.1 of the Code; the specification of the type depository above similarly meets the conditions of Article 16.4.2; the synonymy, etymology, stratigraphic horizon, geologic age and geographic locality are also given to provide context. Additional information for each species, including the detailed description, illustrations, occurrence data, and remarks (= discussion), none of which directly or potentially affects nomenclature, is given in the original work (Filkorn & Pantoja-Alor, 2009) and not repeated here.

Locality data for type specimens from the Cumburindio Formation (lower Aptian) are given in each respective 'Types' section. All of the type specimens from the upper member of the Mal Paso Formation (upper Albian) are from the same type locality in the state of Guerrero, Mexico, just north of the border with the adjacent state of Michoacán, about 0.75 km north of the rural village of Chumbítaro, Michoacán, at 18°29.3'N, 100°42.5'W on the Mexican 1:50,000 scale Coyuca de Catalan (E14A74) topographic map. The geologic age of the upper member of the Mal Paso Formation recently has been constrained to the late Albian based on biostratigraphy of microfossils (Filkorn & Scott, 2011).

SYSTEMATIC PALAEONTOLOGY

Class Anthozoa Ehrenberg, 1834

Subclass Zoantharia de Blainville, 1830

Order Scleractinia Bourne, 1900

Suborder Archaeocoeniina Alloiteau, 1952

Family ACTINASTRAEIDAE Alloiteau, 1952

Genus *Actinastrea* d'Orbigny, 1849

Actinastrea chumbitaroensis n. sp.

2009 *Actinastrea chumbitaroensis* Filkorn & Pantoja-Alor, p. 79, fig. 29 (deemed unpublished for purposes of zoological nomenclature).

Diagnosis. Corallum ramose. Calicular margin typically hexagonal. CD 1.2–1.8 mm. Distance between calicular centers about 1.5 mm. Septa 16 in number, octamerally arrayed in two cycles, and laterally free orally. Columella prominent, styliform, cylindrical.

Etymology. Named for the village of Chumbítaro, Michoacán, which is just south of the type locality in the state of Guerrero, with the Latin suffix *-ensis* = of or from a place.

Types. Three fragments: holotype IGM-7036 (20 x 33 mm in width and 15 mm in height); paratype IGM-7037 (28 x 18 mm in width and 40 mm in height), with two thin sections (M-01 and M-02); and paratype IGM-7038 (20 x 35 mm in width and 35 mm in height).

Type stratum. Upper member of Mal Paso Formation, bed MP17, upper Albian.

Type locality. In state of Guerrero, Mexico (details above).

Suborder Rhipidogyrina Roniewicz, 1976

Family RHIPIDOGYRIDAE Koby, 1905

Genus *Saltocyathus* Morycowa & Masse, 1998

Saltocyathus cumburindioensis n. sp.

2009 *Saltocyathus cumburindioensis* Filkorn & Pantoja-Alor, p. 35, fig. 14 (deemed unpublished for purposes of zoological nomenclature).

Diagnosis. Corallum relatively large, flabellate; calicular margin elliptical. Septa numerous and relatively thick. Tabular endothecal dissepiments vertically spaced about 6 per 5 mm.

Etymology. Named for the formation in which the samples were found, the Cumburindio Formation, with the Latin suffix *-ensis* = of or from a place.

Types. Holotype, IGM-7006, fairly well preserved but with calice not exposed, elliptical CD 40 x 75 mm, height 75 mm; paratype, IGM-7007, a small, weathered fragment, with two thin sections (TZ-49 and TZ-50).

Type stratum. Cumburindio Formation, lower Aptian.

Type locality. Upper slopes of Loma de San Juan, a small hill just south of Turitzio, Michoacán, Mexico, at 18°31.28'N, 100°56.65'W on Mexican 1:50,000 scale Huetamo (E14A64) topographic map.

Genus *Preverastraea* Beauvais, 1976

Preverastraea coatlicueae n. sp.

2009 *Preverastraea coatlicuae* Filkorn & Pantoja-Alor, p. 82, fig. 30 (deemed unpublished for purposes of zoological nomenclature).

Diagnosis. Corallum plocoid. Wall of corallite developed as single parathecal zone; outer corallite wall absent. CD 4–5 mm. Septa 12 in number and hexamerally arrayed in two cycles.

Etymology. Named for Coatlicue, an Aztec goddess of the Earth. Spelling of species name given as new herein is the correct original name of this taxon.

Types. Holotype, IGM-7039, about 85 x 150 mm in width and 75 mm in height, with two thin sections (M-22 and M-23); paratype, IGM-7040, 90 x 140 mm in width and 90 mm in height (part of a much larger corallum that was about 38 cm in diameter).

Type stratum. Upper member of Mal Paso Formation, upper Albian; species common in coral reef horizon, bed MP13 (types), and also observed in beds MP 9 and MP 5, stratigraphically below reef horizon.

Type locality. In state of Guerrero, Mexico (details above).

Preverastraea tociae n. sp.

2009 *Preverastraea tocae* Filkorn & Pantoja-Alor, p. 85, fig. 31 (deemed unpublished for purposes of zoological nomenclature).

Diagnosis. Corallum plocoid or subcerioid. Wall of corallite developed as single parathecal zone; outer corallite wall absent. CD 2.2–6 mm. Septa 12–24 in number and hexamerally arrayed in two to three cycles.

Etymology. Named for Toci, an Aztec goddess of the Earth. Spelling of species name given as new herein is the correct original name of this taxon.

Types. Holotype, IGM-7041, 70 x 120 mm in width and 90 mm in height, with two thin sections (M-18 and M-19); paratype, IGM-7042, 90 x 130 mm in width and 60 mm in height.

Type stratum. Upper member of Mal Paso Formation, upper Albian; holotype from coral reef horizon, bed MP13; paratype from lower portion of bed MP 9, stratigraphically just below reef horizon.

Type locality. In state of Guerrero, Mexico (details above).

Suborder Faviina Vaughan & Wells, 1943

Family MONTLIVALTHIIDAE Dietrich, 1926

Genus *Latiphyllia* de Fromentel, 1861*Latiphyllia mexicana* n. sp.

2009 *Latiphyllia mexicana* Filkorn & Pantoja-Alor, p. 87, fig. 32 (deemed unpublished for purposes of zoological nomenclature).

Diagnosis. Corallum typically phaceloid, flabellate and relatively large. Calicular diameters larger than those of other members of genus: LCD typically 30–40 mm; GCD 45–125 mm. Costae laterally spaced 3–4 per 5 mm.

Etymology. Named for the country of Mexico.

Types. Holotype, IGM-7043; paratype figured by Filkorn & Pantoja-Alor (2009), IGM-7044, with one thin section (M-60); and 15 other paratypes, IGM-7045 to IGM-7056, IGM-7723 to IGM-7725.

Type stratum. Upper member of Mal Paso Formation, upper Albian; most of specimens, including holotype, from coral reef horizon, bed MP13.

Type locality. In state of Guerrero, Mexico (details above).

Genus *Thecosmilia* Milne Edwards & Haime, 1848*Thecosmilia guerreroensis* n. sp.

2009 *Thecosmilia guerreroensis* Filkorn & Pantoja-Alor, p. 89, fig. 33 (deemed unpublished for purposes of zoological nomenclature).

Diagnosis. Corallum relatively small for genus. Corallites monocentric, elongate, tapered aborally, and laterally free orally. CD 12–15 mm. Septa relatively few in number, typically 24 and arranged hexamerally in three cycles.

Etymology. Name derived from the Mexican state of Guerrero, where the type specimen was found, with the Latin suffix *-ensis* = of or from a place.

Types. Holotype, IGM-7726, with two thin sections (M-24 and M-25).

Type stratum. Upper member of Mal Paso Formation, upper Albian. Holotype found in float debris on bed MP10, possibly originally derived from bed MP11; both units a few meters stratigraphically below coral reef horizon, bed MP13.

Type locality. In state of Guerrero, Mexico (details above).

Genus *Mycetophyllopsis* Oppenheim, 1930

Mycetophyllopsis azteca n. sp.

2009 *Mycetophyllopsis azteca* Filkorn & Pantoja-Alor, p. 95, fig. 35 (deemed unpublished for purposes of zoological nomenclature).

Diagnosis. Corallum meandroid, series relatively few in number. Septa relatively thin with wide interseptal spaces.

Etymology. Named for an ancient people of Mexico, the Aztec. The specific name is treated as a noun in apposition.

Types. Holotype, IGM-7730; paratype, IGM-7731, with two thin sections (M-11 and M-12); and paratype, IGM-7732.

Type stratum. Upper member of Mal Paso Formation, upper Albian, coral reef horizon, bed MP13.

Type locality. In state of Guerrero, Mexico (details above).

Suborder Meandriina Alloiteau, 1952

Family DENDROGYRIDAE Alloiteau, 1952

Genus *Orbignygyra* Alloiteau, 1952

Orbignygyra? incognita n. sp.

2009 *Orbignygyra? incognita* Filkorn & Pantoja-Alor, p. 103, fig. 38 (deemed unpublished for purposes of zoological nomenclature).

Diagnosis. Corallum meandroid and massive. Series relatively narrow, about 1–2 mm in width. Septa laterally spaced 3 per 2 mm along wall of series. Columella absent.

Etymology. From Latin *incognitus* = unknown or strange, alluding to the uncertainty of some of its morphological characteristics.

Types. Holotype, IGM-7739, about 75 x 90 mm in width and 70 mm in height, with two thin sections (M-61 and M-62).

Type stratum. Upper member of Mal Paso Formation, upper Albian, coral reef horizon, bed MP13.

Type locality. In state of Guerrero, Mexico (details above).

Suborder Fungiina Verrill, 1865

Family ACTINACIDIDAE Vaughan & Wells, 1943

Genus *Actinaraea* d'Orbigny, 1849

Actinaraea michoacanensis n. sp.

1944 *Actinaraea* sp. cf. *A. arborescens* (Felix, 1891); Hedberg & Pyre, p. 7.

1944 *Actinaraea arborescens* (Felix, 1891); Wells, p. 440, pl. 72, figs. 1–5, pl. 74, fig. 1.

1957 *Actinaraea arborescens* (Felix, 1891); von der Osten, p. 572.

1997 *Actinaraea arborescens* (Felix, 1891); Baron-Szabo, p. 88.

2009 *Actinaraea michoacanensis* Filkorn & Pantoja-Alor, p. 48, fig. 19 (deemed unpublished for purposes of zoological nomenclature).

Diagnosis. Corallum massive to ramose. Calices 2–5 mm in diameter; calicular centers spaced 3.5–7 mm apart. Septa numerous, up to four complete cycles developed in larger corallites.

Etymology. Named for the Mexican state in which the samples were found, with the Latin suffix *-ensis* = of or from a place.

Types. Holotype, IGM-7016, fragment of corallum, about 45 x 50 mm in width and 75 mm in height, with one thin section (TZ-48).

Type stratum. Cumburindio Formation, lower Aptian.

Type locality. Coral reef horizon at top of Loma de San Juan, a small hill just south of Turitzio, Michoacán, Mexico, at 18°31.28'N, 100°56.65'W on Mexican 1:50,000 scale Huetamo (E14A64) topographic map.

Genus *Thamnarea* Étallon in Thurmann & Étallon, 1864

Thamnarea hornosensis n. sp.

2009 *Thamnarea hornosensis* Filkorn & Pantoja-Alor, p. 51, fig. 20 (deemed unpublished for purposes of zoological nomenclature).

Diagnosis. Corallum typically large, greater than 1 m in both diameter and height, and exclusively ramose; branches elongate, 8–20 mm in diameter, but most commonly about 15 mm. Distance between calicular centers 4–5 mm. Number of septa variable, usually 10–12 axially, but as many as 40–56 peripherally. Septocostae laterally spaced 4 per mm.

Etymology. Named for the type locality, the Arroyo Los Hornos, with the Latin suffix *-ensis* = of or from a place.

Types. Holotype corallum, IGM-7017, with nine thin sections (TZ-62 to TZ-70).

Type stratum. Cumburindio Formation, lower Aptian.

Type locality. Knickpoint in thalweg of Arroyo Los Hornos, about 1 km north of Turitzio, Michoacán, Mexico, at approximately 18°32.10'N, 100°56.74'W on Mexican 1:50,000 scale Huetamo (E14A64) topographic map.

Family THAMNASTERIIDAE Vaughan & Wells, 1943

Genus *Thalamocaeniopsis* Alloiteau, 1953

Thalamocaeniopsis mexicanensis n. sp.

2009 *Thalamocaeniopsis mexicanensis* Filkorn & Pantoja-Alor, p. 112, fig. 42 (deemed unpublished for purposes of zoological nomenclature).

Diagnosis. Corallum relatively large for genus and massive to ramose. CD 2.5–8 mm, commonly 5 mm. Calicular centers typically spaced 4–6 mm apart.

Etymology. Named for the country of origin, with an appropriate connective and the Latin suffix *-ensis* = of or from a place.

Types. Holotype, IGM-7742, with two thin sections (M-20 and M-21); five paratypes, IGM-7743 to IGM-7747.

Type stratum. Upper member of Mal Paso Formation, upper Albian; all specimens from coral reef horizon, bed MP13, except for paratype IGM-7747, from unit MP17.

Type locality. In state of Guerrero, Mexico (details above).

Genus *Thamnasteria* Lesauvage, 1823

Thamnasteria tonantzinae n. sp.

2009 *Thamnasteria tonantzinae* Filkorn & Pantoja-Alor, p. 114, fig. 43 (deemed unpublished for purposes of zoological nomenclature).

Diagnosis. Corallum massive to ramose. Calices small, CD 1.6–2.4 mm. Calicular centers closely spaced, 1.6–3 mm apart. Septa variable in number: 8–10 axially, but as many as about 30 peripherally. Synapticulothecal wall sometimes weakly developed aborally.

Etymology. Named for Tonantzin, an Aztec goddess of the Earth.

Types. Holotype, IGM-7748, with four thin sections (M-03, M-05, M-06 and M-39).

Type stratum. Upper member of Mal Paso Formation, upper Albian; holotype from bed MP17.

Type locality. In state of Guerrero, Mexico (details above).

Suborder Microsolenina Morycowa & Roniewicz, 1995

Family CUNNOLITIDAE Alloiteau, 1952

Genus *Paracycloseris* Wells, 1934

Paracycloseris effrenatus n. sp.

2009 *Paracycloseris effrenatus* Filkorn & Pantoja-Alor, p. 117, fig. 44 (deemed unpublished for purposes of zoological nomenclature).

Diagnosis. Diameter of corallum small for genus. Septa numerous and inserted in normal hexameral pattern. Columella trabecular, well-developed and narrow.

Etymology. From Latin *effrenatus* = unrestrained, for the unattached mode of life of the corallum.

Types. Holotype, IGM-7749, with CD of 11.6 mm and about 72 septa (Filkorn & Pantoja-Alor, 2009, fig. 44.1); paratype IGM-7750, with CD of 11 mm and about 72 septa, with one thin section (M-07) (Filkorn & Pantoja-Alor, 2009, figs. 44.2 and 44.4); paratype IGM-7751, with CD of 12.8 mm and about 100 septa, with one thin section (M-08) (Filkorn & Pantoja-Alor, 2009, fig. 44.3); paratype lot, IGM-7752.

Type stratum. Upper member of Mal Paso Formation, upper Albian; all specimens from bed MP18.

Type locality. In state of Guerrero, Mexico (details above).

Family LATOMEANDRIDAE Alloiteau, 1952

Genus *Ovalastrea* d'Orbigny, 1849

Ovalastrea malpaso n. sp.

2009 *Ovalastrea malpaso* Filkorn & Pantoja-Alor, p. 119, fig. 45 (deemed unpublished for purposes of zoological nomenclature).

Diagnosis. Corallum massive, typically hemispherical or subspherical and frequently relatively large in size. Calices relatively large, CD 6–12 mm, and laterally spaced 2–7 mm apart. Septa fenestrate axially and numerous, usually four complete cycles and about half of fifth cycle.

Etymology. Named for the type stratum, the Mal Paso Formation. The specific name is a noun in apposition.

Types. Holotype, IGM-7753, a massive corallum about 19 x 23 cm in diameter and 20 cm in height, with three thin sections (M-13, M-14 and M-15); paratype, IGM-7754, part of a massive corallum, about 12 x 13 cm in diameter and 8 cm in height.

Type stratum. Upper member of Mal Paso Formation, upper Albian; holotype from coral reef horizon, bed MP13; paratype from bed MP 5, lower in stratigraphic section.

Type locality. In state of Guerrero, Mexico (details above).

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Acknowledgement of receipt of this paper submitted as Case 3675 was published in BZN 72: 1.

The Case is hereby closed.

On the generic name *Peckhamia* Simon 1900 (Araneae, SALTICIDAE)

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Abstract. In order to resolve an instance of misidentified type species, under Article 70.3 of the International Code of Zoological Nomenclature I select and fix *Synemosyna scorpionia* Hentz, 1846 to be the type species of *Peckhamia* Simon, 1900 (usually cited as 1901), a genus of ant-like salticid spiders from the New World. Acting as First Reviser, for the sake of stability and universality I also establish *Peckhamia* Simon, 1900 as the valid name for this genus, granting it precedence over its simultaneously published subjective synonym *Consingis* Simon, 1900.

As was noted by Cutler in the unpublished part of his Ph.D. dissertation (1970), Simon (1900) proposed two generic names for two different species of ant-like salticid spiders. *Consingis* Simon, 1900 (p. 404) was based on a description of the type species by original designation, *Consingis semicana* Simon, 1900. The name *Peckhamia* Simon, 1900 (p. 404) occurs as a footnote to that diagnosis, with no description, but with the designation of *Synemosyna scorpionea* (sic; misspelling of *scorpionia*) Hentz, 1846 as type species. Simon (1901, p. 496) later provided a complete description of *Peckhamia*, while also redescribing *Consingis* (p. 496) and, except for Cutler (1987, p. 328), later workers have universally attributed *Peckhamia* to Simon, 1901.

Under Article 12.2.5 of the International Code of Zoological Nomenclature (hereafter, Code), the use of an available specific name — not necessarily that of the type species — in combination with a new genus-group name constitutes an ‘indication’, making the latter name available, as long as the specific name can be unambiguously assigned to a nominal species-group taxon. *Synemosyna scorpionea* is easily recognized as a misspelling of *S. scorpionia*, an available nominal species-group taxon, thus fulfilling this condition for *Peckhamia*.

On the other hand, the specimen of *S. scorpionia* examined by Simon and on which he based his generic concept, was reexamined by Cutler (1970) and is not conspecific with *S. scorpionia* (it was a single palp of another *Peckhamia*, possibly *P. americana*, with the original specimen apparently lost) and he included it in *Consingis* as an unpublished new species with the manuscript name of *C. paradoxa*, with its synonymy with *Synemosyna scorpionia* Hentz placed in question because the palp in the vial did not fit with the overall morphology of Hentz’s description. Since then specimens which actually fit Hentz’s 1846 description have been discovered and it is obvious that the palp in the vial was misplaced. This situation constitutes an instance of misidentified type species. Under Article 70.3 of the Code, in order best to serve stability and universality, I hereby select and fix the nominal species that has previously been cited as type species, viz., *Synemosyna scorpionia* Hentz, 1846 to be the type species of *Peckhamia* Simon, 1900, not the species actually involved in the misidentification, *C. paradoxa* sensu Cutler 1970. The name *Consingis* and the combination *C. semicana* have to my knowledge only been used in three publications, other than catalogues and some web sites, since Simon’s (1900) original description (Simon 1901, p. 496; Galiano 1963, p. 331; Galiano 1974, pp. 2–5), the most recent

being 40 years ago. On the other hand, in that time *Peckhamia* has been used numerous times for multiple species in over 30 publications by nearly 30 authors (Peckham & Peckham, 1909, pp. 365, 367, 640, Emerton, 1909, pp. 232–233; Comstock, 1912, pp. 677, 707–708; Gertsch, 1936, pp. 18–20; Chickering, 1944, pp. 181, 182–186; Chickering, 1946, pp. 414–419; Kaston, 1948, pp. 451–452, 742–745; Crane, 1949, pp. 162–163; Galiano, 1965, pp. 270, 310; Levi & Levi, 1968, p. 105; Prószyński, 1976; p. 17; Richman & Roth, 1976, p. 199; Edwards & Hill, 1978, pp. 112, 115; Kaston, 1978, p. 245; Richman, 1978, pp. 77–78; Richman, 1981, p. 18; Edwards, 1982, pp. 33–34; Richman, 1982, p. 51; Roach & Edwards 1984, pp. 53, 54; Gaddy & Morse, 1985, p. 151; Galiano, 1986, pp. 129, 137–139; Cutler, 1987, pp. 321, 327–328; Roth, 1993, pp. 152–153, 160; Jackman, 1997, p. 133; Paquin & Dupérré, 2003, pp. 190–191, 197; Ubick et al., 2005, pp. 206, 209, 313; Makhan, 2006, pp. 29–32, 34; Richman, 2008, p. 45; Edwards & Hill, 2008, pp. 7, 8; Bradley, 2013, p. 195, pl. 65; Hill & Edwards, 2013, pp. 43–44; Adams, 2014, p. 176, pl. 37).

Recent studies of *Consingis semicana* and *Peckhamia scorpionia* in preparation for a revision of these ant-like spiders have shown that they are congeneric. Since they are type species, their simultaneously published respective genera are subjective synonyms. Based on overall usage of the two names since 1900, it seems best for stability and universality that *Peckhamia* continue to be used as valid. Acting as First Reviser under Article 24.2.2 of the Code, I hereby assign *Peckhamia* Simon, 1900 precedence over *Consingis* Simon, 1900. I further recognize *Peckhamia* as the valid name for this genus and *Consingis* as its junior subjective synonym.

I wish to thank two anonymous Commissioners for their aid in the production of this note in the proper format.

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Acknowledgement of receipt of this paper submitted as Case 3663 was published in BZN **71**: 145.

The Case is hereby closed.

Information and Instructions for Authors

The following notes are primarily for those preparing applications; other authors should comply with the relevant sections. Applications should be prepared in the format of recent parts of the *Bulletin*; manuscripts not prepared in accordance with these guidelines may be returned. For more detailed instructions see <http://iczn.org/content/instructions-authors>.

General. Applications are requests to the Commission to set aside or modify the Code's provisions as they relate to a particular name or group of names when this appears to be in the interest of stability of nomenclature. Authors submitting cases should regard themselves as acting on behalf of the zoological community and the Commission will treat applications on this basis. Applicants should discuss their cases with other workers in the same field before submitting applications, so that they are aware of any wider implications and the likely reactions of other zoologists.

Text. Formatted with double spacing, this should consist of numbered paragraphs setting out the details of the case and leading to a final paragraph of formal proposals. Text references should give dates and page numbers in parentheses, e.g. 'Daudin (1800, p. 49) described ...'. If the plenary power of the Commission is sought, this necessity should be clearly explained (with reference to the relevant Articles of the Code).

References. These should give all authors of a publication. Where possible, ten or more reasonably recent references should be given illustrating the usage of names that are to be conserved or given precedence over older names. The title of periodicals should be in full and in italics; number of volumes, parts, etc. should be in Arabic figures, separated by a colon from the page numbers. Book titles should be in italics and followed by the number of pages and plates, the publisher and place of publication.

Submission of application: Applications should be submitted electronically preferably by email (within the message or as an attachment) to 'iczn@nhm.ac.uk'. When submitted by post, one copy should be sent to: International Commission on Zoological Nomenclature, c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K. The typescript should be accompanied by a disk with copy in IBM PC compatible format (disks and attachments to be in Word, rtf or ASCII text). It would also be helpful if applications were accompanied by photocopies of relevant pages of the main references where this is possible.

The Commission's Secretariat is very willing to advise on all aspects of the formulation of an application.

Illustrations

If a neotype designation is requested it is strongly advisable to submit an appropriate illustration in TIFF format of sufficiently high resolution for printing. Hardcopy figures will be accepted, at discretion of the Editor. It is desirable to illustrate both specimen and its label, with a scale bar. Furthermore, we are willing to consider illustrations of the organisms under discussion contributed simply to add visual interest to the applications. Line drawings should be high-resolution TIFFs at 600–1200 dpi; photographs may be 300–400 dpi.

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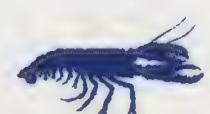
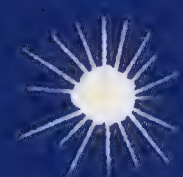
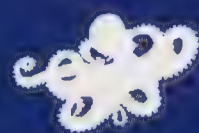
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The Bulletin of Zoological Nomenclature

The Official Periodical
of the International Commission
on Zoological Nomenclature



ICZN

THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

The *Bulletin* is published four times a year for the International Commission on Zoological Nomenclature by the Trustees of the Natural History Museum. The annual subscription for 2015 is £250 or US\$395 or €320, postage included; individual subscribers for personal use are offered a subscription of £125 or US\$195 or €160. All manuscripts, letters and orders should be sent to:

International Commission on Zoological Nomenclature

Natural History Museum

Cromwell Road

London, SW7 5BD, U.K.

(Tel. +44 207 942 5653; e-mail: iczn@nhm.ac.uk)

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Cover image: *Octopus vulgaris* Cuvier, [1797] known as the common octopus, Illustrated by Ernst Haeckel in *Kunstformen der Natur*, pl. 54, fig. 4. The names *Octopus* and *Octopus vulgaris* were placed on the Official Lists of Generic and Specific Names in Zoology by rulings in Opinions 233 and 1681. The common octopus is remarkable amongst invertebrates for its spatial learning capacity, navigational abilities, camouflage techniques and use of tools.

BULLETIN OF ZOOLOGICAL NOMENCLATURE

Volume 72, part 2 (pp. 107–178)

30 June 2015

Notices

(1) Applications and correspondence relating to applications to the Commission should be sent to the ICZN at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each Volume and available online (at <http://iczn.org/content/guidelines-case-preparation>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will, where possible, answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should preferably be sent by e-mail to 'iczn@nhm.ac.uk'.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at <http://iczn.org/content/instructions-comments>).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to iczn@nhm.ac.uk.

New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (Volume 72, part 1, 31 March 2015) went to press. Under Article 82 of the Code, the prevailing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3685: *Arion vulgaris* Moquin-Tandon, 1855 (Gastropoda, Stylommatophora, ARIONIDAE): proposed validation of the specific name as available. I. Balashov.

CASE 3686: *Bulimus rupestris* Philippi, 1836 (Gastropoda, Stylommatophora, CHONDRINIDAE): proposed conservation of the specific name. I. Balashov & F. Welter-Schultes.

CASE 3687: *Phrynus mexicanus* Poinar & Brown, 2004 (Amblypygi, PHRYNIDAE): proposed conservation of the specific name. J.A. Dunlop, M.S. Harvey & G.O. Poinar Jr.

CASE 3688: CHARINIDAE Gray 1849 (Reptilia: Serpentes): proposed emendation of spelling to CHARINAIDAE to remove homonymy with CHARINIDAE Quintero, 1986 (Arachnida, Amblypygi), proposed suppression of CHARINUSIIDAE, an emended spelling of CHARINIDAE Quintero, 1986, and proposed prevalence of UNGALIOPHIINAE McDowell, 1987 over CHARINIDAE Gray, 1849, whenever the two are considered synonyms. D. Quintero, A. & W.A. Shear.

CASE 3689: COGNETTIA Nielsen & Christensen, 1959 (ENCHYTRAEIDAE, Oligochaeta, Annelida): Proposed precedence over *Euenchytraeus* Bretscher, 1906 and *Chamaedrillus* Friend, 1913. R.M. Schmelz, R. Collado & J. Römbke.

CASE 3690: *Alabina* Dall, 1902: proposed fixation of the type species. P. Bouchet & E. Strong.

CASE 3691: *Cookeolus* Fowler, 1928 (Osteichthyes: PRIACANTHIDAE): proposed conservation by designation of *Priacanthus japonicas* Cuvier, 1829 as the type species. V.D. Demirjian.

CASE 3692: *Columba livia* Gmelin, 1789 and *Columba livia domestica* Linnaeus, 1758 (Aves, COLUMBIDAE): proposed conservation. T.M. Donegan

Case 3680***Geophilus bonensis* Meinert, 1870 (currently *Gnathoribautia bonensis*; Chilopoda): proposed conservation of the specific name**

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the specific name *Geophilus bonensis* Meinert, 1870 for a species of geophilomorph centipede, currently classified in the genus *Gnathoribautia* Brölemann, 1909. *G. bonensis* is universally considered the valid name for this species after 1963 and it has often been used in past and recent literature; however it is threatened by the long forgotten subjective synonym *Necrophloeophagus punctiventris* Newport, 1844, which has been completely disregarded as a valid name since 1880.

Keywords. Nomenclature; taxonomy; Chilopoda; *Gnathoribautia*; *Geophilus bonensis*; *Necrophloeophagus punctiventris*; *Arthronomalus mandibularis*; *Arthronomalus punctatus*; *Geophilus hirsutus*; geophilomorph centipedes.

1. Newport (1844a) introduced the name *punctiventris* for a new species he described based upon a single specimen collected in Sicily and belonging to the collections of what was at the time the British Museum (now the Natural History Museum, London).

2. Newport (1844a) described *punctiventris* in a binomen with the generic name ‘*Necrophlaeophagus*’, which is obviously a misspelling for *Necrophloeophagus* Newport, 1843. The latter name had been introduced by Newport (1843a, 1843b) as a subgenus of *Geophilus* Leach, 1814 for a single species *Geophilus longicornis* Leach, 1815 (a junior synonym of *Scolopendra flava* De Geer, 1778, currently *Geophilus flavus* (De Geer, 1778)). In later works Newport (1845, 1856) moved *N. punctiventris* to *Arthronomalus* Newport, 1844, another genus also introduced by him (Newport, 1844b, 1844c) for *G. longicornis* Leach, 1815. Subsequently, however, the nominal species *punctiventris* was invariably cited under the genus *Geophilus* by other authors (Gervais, 1847; Fanzago, 1874, 1875, 1880; Fedrizzi, 1876; Pirotta, 1878), following the synonymization of both *Arthronomalus* and *Necrophloeophagus* under *Geophilus* (Gervais, 1847).

3. Newport’s original and subsequent description of *N. punctiventris* (Newport, 1844a, 1845, 1856) provided insufficient information on the morphology of the species for the true identity of the latter to be ascertained (e.g. Attems, 1929) and was even misunderstood. To the best of our knowledge, the only further record of *N. punctiventris* (Fanzago, 1875) was actually based on misidentified specimens of *Strigamia crassipes* (C.L. Koch, 1835) from Calabria, as recognized by subsequent authors (Leonardi, 1898; Berlese, 1903). Most other authors ignored the nominal species *N. punctiventris*, which was not further mentioned as valid after Fanzago (1880).

4. The true identity of *N. punctiventris* was eventually clarified by Crabill (1962), who examined the holotype and recognized that it actually belonged to a species known as *Gnathoribautia bonensis* (Meinert, 1870). Newport's accounts fully support Crabill's opinion (Bonato & Minelli, 2014). However, Crabill (1962) deliberately did not replace the name *bonensis* Meinert, 1870 with the senior synonym *punctiventris* Newport, 1844, because he considered the latter as a nomen oblitum (Crabill, 1962: 506). Only Mayr (1963) disagreed with Crabill's reversal of the principle of priority. At the time, Ernst Mayr was a Commissioner and his paper, published in the Journal of Natural History, was nothing but a set of negative comments to applications to the Commission for the reversal of precedence in the presence of nomina oblita. Accordingly, Mayr supported *punctiventris* as the valid name for the species, thus formally breaking a usage dating from 1880. Nevertheless, all subsequent authors followed Crabill (1962) and consistently used *Gn. bonensis* as the valid name in all taxonomic and faunistic publications. *Gn. bonensis* was also maintained as valid in a recent overview of the taxonomy and nomenclature of European geophilomorph centipedes (Bonato & Minelli, 2014) and in all digital databases delivered through the web, including taxonomic catalogues (Minelli, 2006; Minelli & Foddai, 2007) and identification tools (Bonato et al., 2014).

5. Meinert (1870) described *Geophilus bonensis* from near Annaba, Algeria, and the species was repeatedly recorded from other countries in the Mediterranean area, including Sicily (Silvestri, 1898; Berlese, 1903; Minelli & Iovane, 1987). It was first moved to the genus *Pachymerium* C.L. Koch, 1847 by Silvestri (1896); eventually, since Attems (1929), it has been included in the genus *Gnathoribautia* Brölemann, 1909. Moreover, since Attems (1929) *G. bonensis* has been recognized as a senior synonym (and thus the valid name) of the type species of *Gnathoribautia*, which is *Mecistocephalus agricola* Attems, 1900, by original designation. Up to now, *G. bonensis* has been used as valid by at least 12 authors in 13 publications in the last 50 years, over a span of more than 10 years, including original faunistic reports (Minelli, 1983; Minelli & Iovane, 1987; Zapparoli et al., 2004), revisionary catalogues (Foddai et al., 1995, 1996; Borges & Enghoff, 2005; Zapparoli & Minelli, 2005; Enghoff, 2008; Minelli & Zapparoli, 2011), collection catalogues (Ilie et al., 2009), taxonomic monographs (Bonato, 2011; Bonato et al., 2014) and phylogenetic analyses (Bonato & Minelli, 2014).

6. Besides *N. punctiventris*, to the best of our knowledge no other older name is available for *G. bonensis*. Actually, when introducing *G. bonensis*, Meinert (1870) annotated with doubt that his species could be the same of one or two other nominal species previously described from Algeria, namely *Arthronomalus mandibularis* Lucas, 1846 and *Arthronomalus punctatus* Newport, 1846. The same doubt was also expressed by Berlese (1893). However, the original descriptions and illustrations of *A. mandibularis* (see Lucas, 1846a, 1846b) and of *A. punctatus* (see Newport in Lucas, 1846b) are detailed enough to rule out such possibility: major differences of species-specific diagnostic value include the absence of denticles on the forcipules and the presence of claws on the legs of the ultimate pair in *A. mandibularis*, and the general shape of the forcipular coxosternite and denticles in *A. punctatus*. Additionally, a junior synonym of *G. bonensis*, namely *Geophilus hirsutus* Porat, 1871, was adopted by some authors as the valid name for the species (Porat, 1893, 1895; Verhoeff, 1895, 1896, 1898, 1899, 1901, 1902, 1902–25; Attems, 1903, 1927;

Brölemann, 1900a, 1900b, 1909, 1920, 1921, 1932), following the erroneous opinion by Porat (1893) that the original description of *G. bonensis* dated to 1871 whereas that of his *G. hirsutus* dated to 1870. The correct priority between the two names had long remained under discussion (Demange, 1959), although it has been embraced by most authors since Attems (1929), and recently confirmed by publication date information provided by Jeekel (2005). Conversely, *G. hirsutus* has not been cited further as valid since Brölemann (1932).

7. Despite the fact that *N. punctiventris* is a senior synonym of *G. bonensis*, we think that resurrecting the former name would not serve nomenclatorial universality and stability because it has remained unused since 1880, whereas *G. bonensis* is currently in use as the valid name for this species. However, of the two conditions for the reversal of precedence (Article 23.9.1 of the Code), only one is fully met (*N. punctiventris* was not used as valid after 1899; Article 23.9.1.1), whereas the other condition (Article 23.9.1.2) is not fully satisfied (*G. bonensis* has been used as valid in less than 25 publications in the last 50 years, even though by more than 10 authors and encompassing a span of more than 10 years). To maintain stability, we advocate the conservation of *G. bonensis* over *N. punctiventris*.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the specific name *punctiventris* Newport, 1844, as published in the binomen *Necrophloeophagus punctiventris*, for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (2) to place on the Official List of Specific Names in Zoology the name *bonensis* Meinert, 1870, as published in the binomen *Geophilus bonensis*;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *punctiventris* Newport, 1844, as published in the binomen *Necrophloeophagus punctiventris* and as suppressed in (1) above.

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Acknowledgement of receipt of this application was published in BZN 72: 2.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3684

***Elasmostethus dorsalis* Jakovlev, 1876 (currently *Elasmucha dorsalis*; Insecta, Heteroptera): proposed precedence over *Acanthosoma vicinum* Uhler, 1861 (currently *Elasmucha vicina*)**

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the widely used specific name *Elasmucha dorsalis* (Jakovlev, 1876) for a species of subsocial acanthosomatid bug from East Asia. The name is threatened by the senior subjective synonym *Elasmucha vicina* (Uhler, 1861), which has seldom been used since its first publication. Therefore, precedence of the name *Elasmucha dorsalis* (Jakovlev, 1876) is proposed.

Keywords. Nomenclature; taxonomy; Heteroptera; ACANTHOSOMATIDAE; *Elasmucha*; *Elasmucha dorsalis*; *Elasmucha vicina*; East Asia.

1. Uhler (1861, p. 286) described a new species, *Acanthosoma vicinum* (Insecta, Heteroptera, ACANTHOSOMATIDAE) from Hong Kong.

2. Jakovlev (1876, p. 106) described a new species, *Elasmotethus dorsalis* from the Russian Far East. This species was transferred to *Elasmucha* by Reuter (1891, pp. 172, 177).

3. *Acanthosoma vicinum* was greatly ignored by subsequent authors: it was not cited except in taxonomic catalogues and lists (Stål, 1876, p. 115; Lethierry & Severin, 1893, p. 260; Kirkaldy, 1909, p. 181; Hoffmann, 1932, p. 10, 1935, p. 105), and it was explicitly regarded as of unknown or doubtful identity in all of these works as well as by Hsiao & Liu (1977, p. 175). Wu (1933, p. 217) cited the epithet in combination with the generic name *Cyphostethus* Fieber, 1860 without providing any explanation. The single exception is the contribution by Kumar (1974, pp. 47, 50), who reexamined a single male syntype, designated it as the lectotype, provided highly inaccurate drawings of the pronotum and the metapleuron, and established a new monotypic genus, *Grossaria* Kumar, 1974, for it. Tsai & Rédei (2015, p. 376) showed that the illustrations and the description provided by Kumar (1974) were incorrect; as a consequence no subsequent authors were able to recognize this species, and the genus and the species have never been cited except in the taxonomic catalogue by Göllner-Scheiding (2006, p. 178).

4. The identity of *Elasmucha dorsalis* was clarified by Kerzhner (1972, pp. 215, 218). There has been an unequivocal agreement about the identity of *E. dorsalis* among subsequent authors. This biological species is widely distributed in East Asia (Siberia and the Far East territory of Russia, Kazakhstan, Mongolia, North and South Korea, Japan, and several provinces of China) (Tsai & Rédei, 2015, pp. 379–380), and it has frequently been cited in the literature. The wide usage of the name was demonstrated by Tsai & Rédei (2015, p. 380) by a compilation of 115 references published in the immediately preceding 50 years. In addition to the numerous faunistic records the bibliography of the species includes papers providing redescriptions, photos or illustrations of diagnostic characters of the adults (Petrova, 1975, p. 108; Hsiao & Liu, 1977, p. 164; Vinokurov, 1979, p. 155; Zhou, 1985, p. 16; Kanyukova, 1988, p. 915; Nonnaizab, 1988, p. 225; Zhang & Sie, 1992, p. 250; Lin & Zhang, 1993, p. 134; Tomokuni, 1993, p. 238; Lin, 1995, p. 64; Vinokurov & Kanyukova, 1995, p. 195; Bu & Zheng, 1997, p. 209; Lin et al., 1999, p. 99; Yamamoto & Hayashi, 2012, p. 514) and the immatures (Lin, 1995, p. 64; Kobayashi & Tachikawa, 2004, p. 301), host plant records and other information on various aspects of its bionomics (Josifov & Kerzhner, 1978, p. 165; Kerzhner, 1978, p. 53; Zheng & Gao, 1990, p. 18; Lin & Zhang, 1993, p. 134; Tomokuni, 1993, p. 238; Chen et al., 1995, p. 207; Lin, 1995, p. 64; Lin et al., 1999, p. 99; Kobayashi & Tachikawa, 2004, p. 301; Yamamoto et al., 2009, p. 35), agricultural importance (Lin, 1995, p. 64) and even physiology (Hori, 1972, p. 502). Particularly the remarkable reproductive behaviour of the species was a subject of a detailed study (Kudo et al. 1989; Kudo 1990a–c, 2000, 2001); this information has been cited in comprehensive handbooks on general insect ecology and behaviour (Costa 2006, p. 284, Trumbo, 2012, p. 83). This species was selected to represent the ACANTHOSOMATIDAE in a cladistic analysis of pentatomoidean families (Xu, 1993). It was also included in a molecular study on the phylogenetic relationships of various acanthosomatids and the coevolution with their gut symbiotic bacteria (Kikuchi et al., 2009); its mitochondrial gene of cytochrome oxidase subunit I (mtDNA-COI) is available from GenBank (AB368845.1). The species name has been cited in comprehensive reference books on Heteroptera (Schuh & Slater 1995, p. 217), handbooks on agricultural and forestry entomology (Wu, 1984, p. 38; Lin, 1995, p. 64; Hori, 2000, p. 16) and popular insect books and field guides targeting a wide public (Kawasawa & Kawamura, 1975, p. 238; Tomokuni,

1993, p. 238; Kwon & Huh, 1998, p. 73; Kinota, 2006, p. 390; Yamamoto & Hayashi, 2012, p. 514).

5. Based on the re-examination of the lectotype of *Acanthosoma vicinum* Tsai & Rédei (2015, pp. 375, 379) transferred it to *Elasmucha* and concluded that it is a senior subjective synonym of *Elasmucha dorsalis*.

6. After its original description, *E. vicinum* was not correctly recognized by subsequent authors until Tsai & Rédei (2015). On the other hand, there is extensive and substantial literature on this biological species under the junior name *E. dorsalis*. It is a widely distributed and frequent species in East Asia. Its specialized reproductive behaviour has been a subject of detailed study therefore it is treated in handbooks and textbooks of insect ecology and behaviour. It appears in the agricultural and ecological literature and even in popular books on insects, i.e. references primarily targeting non-taxonomists. In all of these works it is invariably referred to under the junior name *E. dorsalis*. A discussion among heteropterists prior to preparation of the present application suggested that the opinion of the overwhelming majority of the community is that changing the name in prevailing usage simply because of adherence to the Principle of Priority is undesirable and would threaten stability (cf. Article 23.2 of the Code). The number and authorship of the works using the junior name meet the conditions of Article 23.9.1.2., but the senior name was used as a valid name after 1899 therefore the 'automatic' conservation of *E. dorsalis* under Article 23.9.2 is not possible. Therefore, the case is brought to the Commission under the provisions of Article 23.9.3.

7. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to give the specific name *dorsalis* Jakovlev, 1876, as published in the binomen *Elasmotethus dorsalis*, precedence over the specific name *vicinum* Uhler, 1861, as published in the binomen *Acanthosoma vicinum*, whenever the two are considered to be synonyms;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *dorsalis* Jakovlev, 1876, as published in the binomen *Elasmotethus dorsalis*, with the endorsement that it is to be given precedence over the name *Acanthosoma vicinum* Uhler, 1861 whenever the two are considered to be synonyms;
 - (b) *vicinum* Uhler, 1861, as published in the binomen *Acanthosoma vicinum*, with the endorsement that it is not to be given priority over the name *Elasmotethus dorsalis* Jakovlev, 1876 whenever the two are considered to be synonyms.

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Acknowledgement of receipt of this application was published in BZN 72: 2.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3656

***Cerambyx striatus* Goeze, 1777 (currently *Dorcadion glycyrrhizae striatum*) and *Cerambyx striatus* Fabricius, 1787 (currently *Chydarteres striatus*) (Insecta, Coleoptera, CERAMBYCIDAE): proposed conservation of the specific names**

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Abstract. The purpose of this application, under Article 23.9.5 of the Code, is to conserve the specific names *Cerambyx striatus* Goeze, 1777 and *Cerambyx striatus* Fabricius, 1787. *Cerambyx striatus* Linnaeus, 1758, *C. striatus* Goeze, 1777 and *C. striatus* Fabricius, 1787 are primary homonyms, but the first name has never been congeneric with either of the other two because it was transferred to *Callidium* Fabricius, 1775 two years before the description of the first junior primary homonym. The other two nominal species have not been considered congeneric since 1817, when Fabricius's species was transferred to *Trachyderes* Dalman, 1817. Finally, *C. striatus* Goeze was removed from *Cerambyx* Linnaeus, 1758 and placed in *Dorcadion* Dalman, 1817 in 1947. Currently, *Cerambyx* has no species with the specific name *striatus* and the three primary homonyms are in use in distinct generic combinations and are placed in three different subfamilies of CERAMBYCIDAE. It is proposed that the names *Cerambyx striatus* Goeze, 1777 and *C. striatus* Fabricius, 1787 be conserved by ruling that they are not invalid by reason of being junior primary homonyms of *C. striatus* Linnaeus, 1758.

Keywords. Nomenclature; taxonomy; Insecta; Coleoptera; CERAMBYCIDAE; CERAMBYCINAE; LAMIINAE; SPONDYLIDINAE; ASEMINE; DORCADIONINI; EBURIINI; TRACHYDERINI; *Cerambyx*; *Aseum*; *Dorcadion*; *Styliceus*; *Chydarteres*; *Cerambyx striatus*; *Aseum striatum*; *Dorcadion glycyrrhizae striatum*; *Chydarteres striatus*; *Styliceus sericata*; longhorn beetles; Palaearctic Region; Nearctic Region; Neotropical Region.

1. Linnaeus (1758, p. 342) placed 25 genera in the order Coleoptera. *Cerambyx* Linnaeus, 1758, the type genus of CERAMBYCIDAE Latreille, 1802, was described by Linnaeus (1758, pp. 342, 388) for 52 species. One of these was *Cerambyx striatus* Linnaeus, 1758, a species widely distributed in the Northern Hemisphere boreal forest, from North America to Asia and Europe (type locality: '*Habitat in Europa*', Linnaeus, 1758, p. 396). *Cerambyx striatus* Linnaeus, 1758 was transferred by Fabricius (1775, p. 191) to his new genus *Callidium* Fabricius, 1775 and 55 years later, Eschscholtz (1830, p. 66) described *Aseum* Eschscholtz, 1830, transferring this species to it, where it is currently placed. *Aseum striatum* (Linnaeus, 1758) has 26 junior synonyms (Löbl & Smetana, 2010) and its syntypes are in the Linnean Society of London, London, United Kingdom (The Linnean Society of London, 2014).

Today *Asemum* has nine valid species and is placed in the tribe ASEMINI Thomson, 1861 of SPONDYLIDINAE Audinet-Serville, 1832, CERAMBYCIDAE (Löbl & Smetana, 2010; Bezark, 2005).

2. Goeze (1777, pp. 458–459) divided *Cerambyx* into five classes ('Klasse') and described *Cerambyx striatus* Goeze, 1777 in his Class Three. Goeze (1777, p. 464) credited his *C. striatus* to I.I. Lepekhin (cited by Goeze as 'Lepechins'), who described this species in his book (Lepekhin, 1772, p. 320, pl. 10, fig. 8), later translated into German (Lepekhin, 1775). Goeze (1777, p. 464) cited the German translation (Lepekhin, 1775, p. 198, pl. 10, fig. 8), in which Lepekhin did not mention the Latin name for this species, but Goeze failed to note that, in the original Russian version, Lepekhin (1772, p. 320, footnote) had tentatively identified his specimen as 'Lineatus Linn.?'. As Lepekhin (1772, 1777) did not propose any new name in accordance with the Code, the first available name for this species therefore dates from Goeze (1777), as he was the first to describe it applying binominal nomenclature. Sherborn (1902, p. xxvi) claimed that Goeze (1777) did not apply binominal nomenclature in his work. Goeze's (1777) volume contains a number of polynominal names and is not consistently binominal. However many names established by Goeze (1777) are widely used in zoology, including important catalogues, e.g. Löbl & Smetana (2010) and the Commission has in the past placed several Goeze's names on the Official List, with no ruling on their availability (e.g. *Cicada atropunctata* Goeze, 1778 [Opinion 365]; *Aphis juglandis* Goeze, 1778 [Opinion 1358]; *Curculio marmoratus* Goeze, 1777 [Opinion 1526]; *Staphylinus punctulatus* Goeze, 1777 [Opinion 1250]). Since its original description, many authors have treated *Cerambyx striatus* Goeze, 1777 (although in various generic combinations) as a valid name; and the name is included in all major catalogues, checklists and databases (e.g. Aurivillius, 1921, p. 25; Breuning, 1947, p. 165; Breuning, 1962, p. 210; Danilevsky, 2001, p. 6; Danilevsky, 2006, p. 12; Löbl & Smetana, 2010, p. 255; Tavakilian & Chevillotte, 2012, etc.). Rejecting this name of Goeze on the grounds that it was not published in a consistently binominal work would undoubtedly lead to considerable confusion. A proposal of including a request under the plenary power to consider the name *Cerambyx striatus* Goeze, 1777 as available will be the simplest solution and the most suitable for maintaining stability.

3. *Cerambyx striatus* Goeze, 1777 remained in its original combination until Aurivillius (1921, p. 25) transferred it to *Dorcadion* Dalman, 1817, and Danilevsky (2001, p. 6) subsequently considered it as one of the 12 subspecies of *Dorcadion glycyrrhizae* (Pallas, 1773). *Dorcadion glycyrrhizae striatum* is distributed along the eastern border between Russia and Kazakhstan (Danilevsky, 2001, 2006), and it has four junior synonyms (Löbl & Smetana, 2010). A neotype from Orenburg, Russia, was designated by Danilevsky (2006, p. 12) and deposited in the Zoological Institute of the Russian Academy of Sciences, St. Petersburg, Russia. Currently, *Dorcadion* is composed of more than 200 species and is placed in the tribe DORCADIONINI Swainson, 1840 of CERAMBYCIDAE (Latreille, 1802), LAMIINAE Latreille, 1825 (see Löbl & Smetana, 2010; Bezark, 2005).

4. *Dorcadion glycyrrhizae striatum* (Goeze, 1777) has a junior secondary homonym, *Dorcadion striatum* (Dalman, 1817), originally described by Dalman (1817b, p. 175) as *Lamia (Dorcadion) striatum*. Nonetheless, this case of homonymy is well known and a junior subjective synonym of *D. striatum* (Dalman), *Dorcadion holosericeum*

holosericeum Krynicky, 1832, is widely used as the valid name for this species in accordance with the Code (e.g. Löbl & Smetana, 2010). The two morphs of *Dorcadion glicyrrhizae striatum* (Goeze, 1777) proposed by Breuning (1947, p. 165) – *D. striatum* m. *humero-punctatum* and *D. striatum* m. *dorsolatevittatum* – are infrasubspecific and unavailable under Article 45.6.2 of the Code.

5. In the second part of his *Catalogus systematicus Coleopterorum*, Voet (1778, p. 17) described the new species *Cerambyx striatus* from Demerara, a former Dutch colony in today's Guyana. Nonetheless, in contrast to Goeze's volume, Voet's work is widely considered as non-binominal and thus names published in it, including '*Cerambyx striatus* Voet', are broadly considered as unavailable (e.g. Sherborn, 1902; White, 1981; Cebeci & Özdikmen, 2010; Löbl & Smetana, 2010; Krell, 2012). Recognizing this, '*Cerambyx striatus* Voet' is here treated as an unavailable name.

6. After its publication in the 18th century, the name *Cerambyx striatus* Voet was largely forgotten until 1991, when Tavakilian (1991, p. 440), based on the illustration published by Voet (1778), established the synonymy between *Cerambyx striatus* Voet, 1778 and *Styliceps sericata* (Pascoe, 1859), the only species of *Styliceps* Lacordaire, 1868, and considered the supposed senior synonym as the valid name. Following Tavakilian's (1991) decision, a great number of subsequent authors have cited *Styliceps striatus* (Voet, 1778) as a valid name (e.g., Martins, 1999, p. 132; Hovore, 2006, p. 371; Giuglaris, 2012, p. 61; Monné, 2013, p. 195). Nonetheless, as Voet's name is unavailable, the valid name for this species must be *Styliceps sericata* (Pascoe, 1859) and the synonymy proposed by Tavakilian (1991) is incorrect. In fact, *Styliceps sericata* was already recognized as valid both before (e.g. Lacordaire, 1868, p. 292; Bates, 1870, p. 263; Bates, 1872, p. 174; Gemminger & Harold, 1872, p. 2813; Bates, 1880, p. 19; Aurivillius, 1912, p. 78; Blackwelder, 1946, p. 563) as after Tavakilian's work (e.g. Chemsak et al., 1992, p. 3; Chemsak & Noguera, 1995, p. 58) and is the type species of *Styliceps*; therefore, recognizing Voet's name as unavailable does not cause considerably instability.

7. Fabricius (1787, p. 133) described *Cerambyx striatus* Fabricius, 1787 from Cayenne, French Guiana. Thirty years later Dalman (in Schönherr, 1817a, p. 364) established the genus *Trachyderes* Dalman, 1817 with fourteen species, including the transferred *Cerambyx striatus* Fabricius. Finally, Hüdepohl (1985, p. 72) described the genus *Chydarteres* Hüdepohl, 1985 and transferred *Trachyderes striatus* (Fabricius) to it, where it remains today. *Chydarteres striatus* (Fabricius) has two subspecies, the nominotypical subspecies, which is widely distributed in South America east of the Andes, and *C. striatus schaeferi* (Bosq, 1947), known from Bolivia and Argentina (Monné, 2013, p. 730). *Chydarteres striatus striatus* has three junior synonyms; and a syntype is currently housed in the Natural History Museum of Denmark (on long term loan from the Zoologisches Museum, Universität Kiel, Kiel, Germany) (Zimsen, 1964, p. 165; Hüdepohl, 1985, Monné, 2013, pp. 729–730), and other in Hunterian Museum, University of Glasgow, Glasgow, United Kingdom (Hunterian Museum and Art Gallery, 2014). The genus *Chydarteres* has eight species and is placed in the tribe TRACHYDERINI Dupont, 1836 of CERAMBYCIDAE, CERAMBYCINAE.

8. The three primary homonyms – *Cerambyx striatus* Linnaeus, 1758, *C. striatus* Goeze, 1777, and *C. striatus* Fabricius, 1787 – have never all been considered congeneric at once. Linnaeus's species was transferred to *Callidium* by Fabricius

(1775) two years before the description of *C. striatus* Goeze and was therefore never congeneric with any of its junior homonyms. The two latter nominal species, however, were congeneric for 30 years between the description of Fabricius' species in 1787 and its transfer to *Trachyderes* in 1817. Goeze's species remained in *Cerambyx* for 170 years until 1947, when it was transferred to *Dorcadion*. So today *Cerambyx* has no species with the specific name *striatus*.

9. The three primary homonyms are currently placed in different genera and subfamilies: *Asemum striatum* (Linnaeus) in SPONDYLIDINAE, *Dorcadion glycyrrhizae striatum* (Goeze) in LAMIINAE, and *Chydarteres striatus* (Fabricius) in CERAMBYCINAE. Although *Cerambyx*, the genus group name of the original combination, is in the same subfamily as *Chydarteres* (CERAMBYCINAE), they are placed in different tribes: the former in CERAMBYCINI and the latter in TRACHYDERINI. Thus the possibility of the three species being considered congeneric in the future can be dismissed. In order to maintain stability, under Article 23.9.5 of the Code, it is preferable to maintain the three names in their current usage rather than replace the junior homonyms by one of their junior synonyms. The names *Cerambyx striatus* Goeze, 1777 and *C. striatus* Fabricius, 1787 are widely used, and their conservation will promote stability.

10. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that:
 - (a) the name *Cerambyx striatus* Goeze, 1777 is not invalid by reason of being originally published in a not consistently binominal work;
 - (b) the name *Cerambyx striatus* Goeze, 1777 is not invalid by reason of being a junior primary homonym of *Cerambyx striatus* Linnaeus, 1758;
 - (c) the name *Cerambyx striatus* Fabricius, 1787 is not invalid by reason of being a junior primary homonym of the names *Cerambyx striatus* Linnaeus, 1758 and *Cerambyx striatus* Goeze, 1777;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *striatus* Linnaeus, 1758, as published in the binomen *Cerambyx striatus*;
 - (b) *striatus* Goeze, 1777, as published in the binomen *Cerambyx striatus*, with the endorsement that it is not invalid by reason of being originally published in the not consistently binominal work or being a junior primary homonym of *Cerambyx striatus* Linnaeus, 1758, as ruled in (1a) and (1b) above;
 - (c) *striatus* Fabricius, 1787, as published in the binomen *Cerambyx striatus*, with the endorsement that it is not invalid by reason of being a junior primary homonym of *Cerambyx striatus* Linnaeus, 1758 and *Cerambyx striatus* Goeze, 1777, as ruled in (1c) above.

Acknowledgments

We would like to express our gratitude to Miguel A. Monné (*Museu Nacional/UFRJ, Rio de Janeiro, Brazil*), who discovered this nomenclatural problem and entrusted us with its resolution, and to Steve W. Lingafelter (*National Museum of Natural History, Washington, D.C., U.S.A.*), for review and helpful comments on the manuscript. We are also very grateful to Mikhail Danilevsky (*A.N. Severtsov Institute of Ecology and Evolution, Russian Academy of Sciences, Moscow, Russia*) and Eugenio Nearn (*National Museum of Natural History, Washington, D.C., U.S.A.*) for sending copies

of relevant references; to three anonymous ICZN Commissioners for many important improvements to the text, to Thomas Pape and Alexey Solodovnikov (*Natural History Museum of Denmark, Copenhagen, Denmark*) for the information about the whereabouts of the Fabricius's type-specimens, and to Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) for the support offered through scholarships to both authors.

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Acknowledgement of receipt of this application was published in BZN **71**: 2.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3681

***Liancalus* Loew, 1857 and *Scellus* Loew, 1857 (Insecta, Diptera, DOLICHOPODIDAE): proposed conservation of the names by designation of *Dolichopus regius* Fabricius, 1805 as type species for *Anoplomerus* Rondani, 1856**

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Abstract. The purpose of this application, under Article 81.1 of the Code, is to conserve the genus-group names *Liancalus* Loew, 1857 and *Scellus* Loew, 1857 (Diptera, DOLICHOPODIDAE), widely distributed and well-established genera of dolichopodid flies whose names have been used consistently for more than one-and-a-half centuries. They are threatened by a change in the type species of *Anoplomerus* Rondani, 1856, made in a largely-overlooked unpaginated corrigendum on the last page of Rondani (1856). *Liancalus* Loew, 1857 is a replacement name for the homonym *Anoplomerus* and automatically takes its type species. It is proposed that *Liancalus* Loew, 1857 and *Scellus* Loew, 1857 be conserved by designating *Dolichopus regius* Fabricius, 1805 as type species for *Anoplomerus* Rondani, 1856 under the Commission's plenary power. This solution will protect both names and serve to promote nomenclatural stability.

Keywords. Nomenclature; taxonomy; Diptera; DOLICHOPODIDAE; *Anoplomerus*; *Anoplopus*; *Liancalus*; *Scellus*; *regius*; *spinimanus*; long-legged flies; Afrotropical; Nearctic; Oriental; Palearctic.

1. The name *Anoplomerus* was proposed as a new genus by Rondani (1856, p. 141) with *Hydrophorus regius* (Fabricius, 1805) (originally described as *Dolichopus regius* Fabricius, 1805) initially designated (p. 141) as type species and the only species included. However, in a corrigendum published within this paper (Rondani, 1856: unpaginated last page), he changed the type species from *Hydrophorus regius*

(Fabricius) to '*Hydrophorus notatus* Meigen'. Meigen never described a dolichopodid named *notatus* and Rondani was actually referring to *Musca notata* Fabricius, 1781 (see O'Hara et al., 2011, p. 30). *Anoplomerus* Rondani, 1856 is a junior homonym of *Anoplomerus* Guérin-Méneville, 1844 (Coleoptera).

2. The name *Anoplopus* was proposed by Rondani (1857, p. 14) as a new replacement name for the junior homonym *Anoplomerus* Rondani, 1856. Following the corrigendum in Rondani (1856), the type species of *Anoplopus* Rondani, 1856 is automatically '*Hydrophorus notatus* Meigen' [= *Musca notata* Fabricius, 1781] (Article 67.8). *Anoplopus* Rondani, 1856 is a junior homonym of *Anoplopus* Wagler, 1830 (Reptilia).

3. Loew (1857, p. 22) proposed the name *Liancalus* as a new replacement name for *Anoplomerus* Rondani, 1856. The type species of *Liancalus* is automatically '*Hydrophorus notatus* Meigen' [= *Musca notata* Fabricius, 1781] (Article 67.8). Loew clearly intended *Liancalus* as a replacement name for *Anoplomerus* Rondani, 1856: on page 22, after stating that *Liancalus* is a suitable name for the group, Loew writes 'Herr Rondani hat den bereits früher an eine Käfergattung vergebenen Namen *Anoplomerus* dafür vorgeschlagen, der verworfen werden muss.' ['Mr. Rondani has already proposed the name *Anoplomerus* for this, which has previously been given to a beetle genus, and which must be rejected']. Most workers, including Rondani (1861, p. 11), have treated *Liancalus* as a replacement name for *Anoplomerus* (e.g. Ulrich, 1972, p. 3; Dyte, 1975, p. 242; Dyte & Smith, 1980, p. 455; Negrobov, 1991, p. 41; Pollet et al., 2004, p. 52; Yang et al., 2006, p. 246).

4. Loew (1857, p. 22) proposed the name *Scellus* and included the species *Hydrophorus notatus* (Fabricius, 1781) and *Hydrophorus spinimanus* Zetterstedt, 1843 but did not designate a type species. Coquillett (1910, p. 603) subsequently designated *Hydrophorus spinimanus* Zetterstedt, 1843 as the type species, and considered *Anoplomerus* Rondani, 1856 as a junior synonym.

5. Many workers have missed Rondani's (1856, unpaginated last page) corrigendum changing the type species of *Anoplomerus* from *Hydrophorus regius* (Fabricius) [now treated in *Liancalus* Loew, 1857] to *Hydrophorus notatus* "Meigen" [= *Musca notata* Fabricius, 1781] [now treated in *Scellus* Loew, 1857] and incorrectly listed *Anoplomerus* Rondani, 1856 and *Anoplopus* Rondani, 1857 as synonyms of *Liancalus* with type species *Musca virens* Scopoli, 1763 [= *Dolichopus regius* Fabricius, 1805] [(e.g. Dyte (1975, p. 241); Dyte & Smith (1980, p. 455); Negrobov (1991, p. 41); Pollet et al. (2004, p. 52) Yang et al. (2006, p. 246)]. Ulrich (1972) was the first to note the corrigendum of Rondani (1856, unpaginated last page) but claimed that the note on Rondani's (1856) correction page was itself a mistake and should be ignored. However, there is no clear reason for that conclusion, and it could be overturned by any subsequent author. This, therefore, leaves the correct type species open to confusion, and endangers the stability of two commonly used generic names. Corrections of spellings within the text of a publication are covered in Article 33.2.1, but that rule applies only to changes in the original spelling. Therefore, the rules in that Article cannot be directly applied here, although the logic may seem appropriate. We treat the correction in Rondani (1856, last unpaginated page) as valid herein. Hurley (1995, p. 139) correctly listed *Anoplomerus* Rondani, 1856 and *Anoplopus* Rondani, 1857 [published after 20 September 1857 (O'Hara et al., 2011)] as synonyms of *Scellus* Loew, 1857 [published 6 April 1857 (Evenhuis, 1992)]. O'Hara et al. (2011)

also noted the corrigendum and followed Hurley's (1995) interpretation of the synonymy of the two Rondani genera under *Scellus* Loew, 1857.

6. Coquillett (1910, p. 561) interpreted *Liancalus* Loew as a new genus-group name and not a new replacement name when he designated *Musca virens* Scopoli, 1763 [= *Dolichopus regius* Fabricius, 1805] as type species. This designation is invalid under Article 70.2.

7. *Liancalus* Loew, 1857 is a widespread genus of long-legged flies in the subfamily HYDROPHORINAE Lioy, 1864 in the family DOLICHOPODIDAE Latreille, 1809. It is found in all the world's zoogeographical realms except Australasia/Oceania and contains 21 known species (Yang et al. 2006; Runyon & Hurley, 2015). Adults are some of the largest species of DOLICHOPODIDAE and are commonly found on or near waterfalls and seeps. The name has been frequently and consistently used in its current concept since its proposal in 1857, including taxonomic works (e.g. Aldrich, 1893; Dyte, 1967; Evenhuis & Bickel, 2011; Runyon & Hurley, 2015) and major catalogues (Aldrich, 1905; Robinson, 1970; Dyte, 1975; Dyte & Smith, 1980; Negrobov, 1991; Pollet et al., 2004; Yang et al., 2006; Bickel, 2009). A representative list of 70 references using *Liancalus* in its current concept has been provided to the Commission Secretariat. A Google search on "*Liancalus* DOLICHOPODIDAE" returned over 8,500 hits. Moreover, species of *Liancalus* are some of the most recognizable and best known dolichopodids: their immature stages (Vaillant, 1948; Corpus, 1986; Masunaga, 2001), courtship behavior, particularly in regard to evolution of visual signals (Crossley, 1988; Zimmer et al., 2003; Runyon & Hurley, 2015), and prey (Masunaga, 2001; Ulrich, 2004; Runyon & Hurley, 2015) have been described. Thus, this name is used in the sense proposed not just in the taxonomic literature, but widely in other fields of biology.

8. *Scellus* Loew, 1857 is a widespread genus of large long-legged flies in the subfamily HYDROPHORINAE in the family DOLICHOPODIDAE, which occurs throughout the Nearctic and Palearctic zoogeographical realms and contains 25 known species (Hurley, 1995; Yang et al., 2006). Adults are also some of the largest species of DOLICHOPODIDAE and are noted for possessing unusual flag-like abdominal structures called cingula that are thought to function in courtship (Hurley, 1995; Sivinski, 1997; Runyon, 2008). Like *Liancalus*, the name *Scellus* has been frequently and consistently used in its current concept since its proposal in 1857, including in taxonomic works (e.g. Aldrich, 1893; Greene, 1924; Harmston, 1939; Stackelberg, 1951; Hurley, 1995) and major catalogues (Aldrich, 1905; Negrobov, 1991; Pollet et al., 2004; Yang et al., 2006; Bickel, 2009). A representative list of 55 references using *Scellus* in its current concept has been provided to the Commission Secretariat. A Google search on "*Scellus* DOLICHOPODIDAE" returned over 8,300 hits.

9. Recognition of Rondani's change in type species to '*Hydrophorus notatus* Meigen' [= *Musca notata* Fabricius, 1781] would mean that *Liancalus* Loew, 1857 and *Scellus* Loew, 1857 are synonyms. Since both were published in the same work, the senior name would need to be determined by the First Reviser (Article 24.2.2). Accepting the type species change by Rondani (1856, unpaginated corrigendum) would change the current genus concept of *Liancalus*, leaving the species currently in *Liancalus* without a generic name. This action would threaten the current usage of both *Liancalus* and *Scellus*, names and concepts that have been frequently and consistently used for more than 150 years. This would create significant nomenclatural instability and confusion. We seek stabilization of these issues to allow current usage to continue.

10. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to designate *Dolichopus regius* Fabricius, 1805 as the type species of *Anoplomerus* Rondani, 1856;
- (2) to place on the Official List of Generic Names in Zoology the name *Anoplomerus* Rondani, 1856 (gender: masculine), type species *Dolichopus regius* Fabricius, 1805, as ruled in (1) above;
- (3) to place on the Official List of Specific Names in Zoology the name *regius* as published in the binomen *Dolichopus regius* Fabricius, 1805 (specific name of the type species of *Anoplomerus* Rondani, 1856, as ruled in (1) above);
- (4) to place on the Official List of Generic Names in Zoology the name *Liancalus* Loew, 1857 (gender: masculine), type species *Dolichopus regius* Fabricius, 1805 (determined automatically);
- (5) to place on the Official List of Generic Names in Zoology the name *Scellus* Loew, 1857 (gender: masculine), type species *Hydrophorus spinimanus* Zetterstedt, 1843 by subsequent designation by Coquillett;
- (6) to place on the Official List of Specific Names in Zoology the name *spinimanus* as published in the binomen *Hydrophorus spinimanus* Zetterstedt, 1843 (specific name of the type species of *Scellus* Loew, 1857).

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Acknowledgement of receipt of this application was published in BZN 72: 2.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3676***Tupinambis indicus* Daudin, 1802 (currently *Varanus indicus*; Reptilia, Squamata): proposed conservation of usage of the specific name by replacement of the neotype**

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Abstract. The purpose of this application, under Article 75.6 of the Code, is to designate a new neotype for the mangrove monitor *Varanus indicus* (Daudin, 1802), which is endemic to the Moluccan islands of Indonesia. The recent choice of an unrepresentative specimen to serve as neotype for this nominal species has resulted in a shift of the specific name to a different species of *Varanus*, *V. chlorostigma* (Gray, 1831) from New Guinea and surrounding islands, and the recognition of an unnecessary taxon, *V. cerambonensis* Philipp, Bohme & Zeigler, 1999, on Ambon, Seram and Buru in the Moluccas. To conserve the name *indicus* in its original usage and to avoid further taxonomic confusion, it is proposed that the current neotype specimen be replaced by a new one that belongs to the original taxonomic species involved, thereby reducing *V. cerambonensis* to a junior subjective synonym of *V. indicus* and also conserving *V. chlorostigma* in its accustomed use as the valid name for the New Guinean species.

Keywords. Nomenclature; taxonomy; VARANIDAE; *Varanus chlorostigma*; neotype; southwestern Pacific; Moluccas; Ambon; Ravak; New Guinea.

1. *Tupinambis indicus* (currently *Varanus indicus*) was described by Daudin (1802, p. 46), who considered it to be synonymous with or similar to the ‘*Senembi*’ in Jacob de Bondt’s classic work on the natural history of the East Indies (Bontius in Piso, 1658). This presumed synonymy appears to stem from a misinterpretation by Daudin; no *Senembi* is included in de Bondt’s original publication. However, in a 1658 reprint of de Bondt that includes the work of Willem Piso, there is a figure, most likely depicting a *Tupinambis*, in the chapters written by Piso on the fauna of Brazil, and this figure precisely corresponds to Daudin’s reference and description (‘*Senembi*, Iguana 2 figurata’, see Piso, 1658, p. 104).

2. Daudin (1802, vol. 3, p. 47) stated that *V. indicus* was discovered on Ambon in 1792 by Claude Riche, one of the naturalists of the d’Entrecasteaux Expedition. This statement has led some workers to assume that the specimen examined and illustrated in Daudin (1802, p. 46) was actually collected by Riche (e.g. Sprackland, 2004, p. 3). When the d’Entrecasteaux Expedition disbanded as a result of the French revolution after having reached Java in 1793–1794, the natural history collections were confiscated by the Dutch and sent to England. Labillardière (the expedition’s chief botanist) managed to have his collections returned to him a few years later and the plant material is now deposited in the Florence Museum of Natural History, Italy

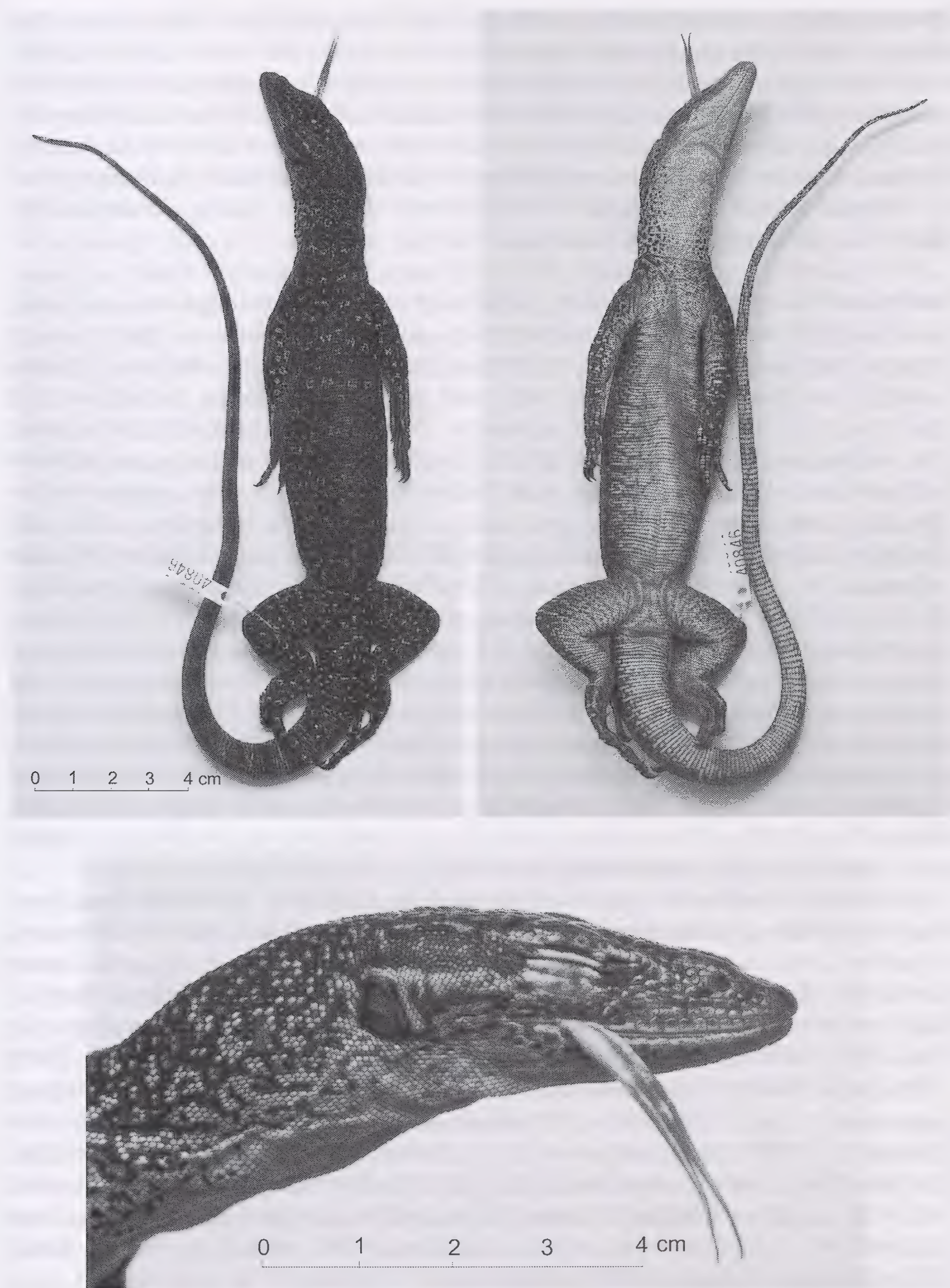


Fig. 1. Full body dorsal, ventral and lateral view of the proposed neotype of *Varanus indicus* (Daudin, 1802), specimen RMNH 40846.

(Frodin, 2007, p. 18). The fate of Riche's collection is more obscure and the whereabouts of his specimens are unknown today. No part of it was ever registered at the National Museum of Natural History, Paris (MNHN) and no specimens of

Varanus collected on Ambon exist at the British Museum (I. Ineich pers. comm. May 2014; C. McCarthy pers. comm. April 2009; Boulenger 1885, vol. 2, p. 317) and therefore it appears unlikely that the specimen examined by Daudin could have been one collected by Riche. It is probable that Daudin and Riche never met, as Riche died in 1797 when Daudin was still early in his career. Only later did Daudin become intimately familiar with Riche's work, after he had been given access to his field notes by Georges Cuvier and Claude Riche's sister-in-law, Mrs Prosny. Unfortunately these notes now appear to be lost (Bour, 2011).

3. It is evident that Daudin described some of his species, such as *Cuora amboinensis* Daudin, 1802 (vol. 2, p. 309), based only on the detailed notes of Riche. Daudin (1802) made clear in his description of *V. indicus*, however, that he had a physical specimen available in his collection that he considered similar to Riche's animal from Ambon and which was used for the diagnostic description and accompanying illustration (which appears to depict a stuffed animal). Considering that nothing else is mentioned by Daudin and that very few collecting expeditions had been made further to the east from Ambon prior to 1802, there seems to be no reason to question Ambon as the type locality. Although it has been assumed that the specimen studied by Daudin was lodged at MNHN and subsequently lost from the collection (Brygoo, 1987; Böhme et al., 1994; Philipp, et al., 1999; Sprackland, 2004; De Lisle, 2009), a corresponding specimen was never catalogued at the MNHN and has probably never been lodged there (I. Ineich, pers. comm. Jan. 2014). Instead, it was most likely part of Daudin's large private collection, which was split up and sold at auction in January 1804, shortly after his death (Bour, 2011). The museum in Paris acquired a large selection of ethanol-preserved lizards from that auction, but there are no records of stuffed specimens being bought. Very few specimens that were sold to private collectors on that occasion have ever been recovered (R. Bour, pers. comm., Jan 2014), and it is unlikely that the specimen used in Daudin's description of *V. indicus* will be located in the future.

4. Studying vouchered material from Ambon, Philipp et al. (1999) found two morphologically different forms of *Varanus* and concluded that one must represent *V. indicus*, and the other an undescribed taxon. Two juvenile specimens at the former Zoological Museum Amsterdam (ZMA 11146c & ZMA 11146d) differed from all other specimens from the type locality. From Daudin's (1802) very general description of *V. indicus*, Philipp et al. concluded that ZFMK 70650 (originally ZMA 11146d) and ZMA 11146c, with an evenly spotted dorsum, dark tongue and without a postocular stripe, represented *V. indicus*, and they designated one of the two specimens, ZFMK 70650, as the neotype for that species (Philipp et al., 1999, p. 276). The other form, with spots arranged in faint transverse bands, a bi-coloured tongue and with a yellow postocular stripe, being well-represented in collections from Ambon, was regarded as an undescribed species and named *V. cerambonensis* Philipp, Bohme & Zeigler, 1999 (p. 281).

5. The present author's observations in the field in 2009 on the islands of Ambon, Seram, Saparua and Buru in the Moluccas failed to detect animals consistent with Philipp et al.'s (1999) neotype-based diagnosis of *V. indicus*. This led to an investigation of the origins of the neotype specimen. It turned out that ZMA 11146 was the catalogue number of a shared jar containing four juvenile specimens with no individual tags, numbers or associated collection information (the individual

a, b, c, d labels were assigned long after the jar had been catalogued, by T. Brandenburg in 1983). Two of the specimens (a & b) correspond in morphology with other known material from Ambon, while the other two (the above-mentioned c and d) correspond best with material from New Guinea and its offshore islands. Except for the number 'ZMA 11146' and the note 'Ambon', there was one additional label in the container, 'KM 2979-9'. Sonja Wijs (*Tropenmuseum, Amsterdam*) traced this KM number to the catalogue of the former Koloniaal Museum Haarlem in Amsterdam; a 'Zoological Collection' had been donated to the latter museum (KM) on 14 March 1913 by military pharmacist W.L.A. Warnier following the death of the collection's owner, notary Willemsz Geerrooms, who had been stationed in Ambon. The catalogue entry does not indicate whether or not the specimens had actually been collected on Ambon, only that the collector lived there. It is fully possible that parts of the collection had been assembled from other provinces or received in exchange from collectors in other regions.

6. The neotype specimen selected by Philipp et al. (1999) agrees in scalation and colour pattern with populations of *Varanus* from the northern and western parts of New Guinea. Animals from this region, in contrast to those from Ambon, generally have lower midbody and dorsal scale counts, they lack a yellow postocular stripe, the dorsum has evenly dispersed yellow dots rather than dots arranged in transverse bands, and their tongue is uniformly dark instead of bi-coloured. A multivariate analysis of scalation characters groups the neotype together with specimens of *Monitor chlorostigma* Gray, 1831 (currently *Varanus chlorostigma*) from the island of Waigeo (Weijola & Sweet, 2015). Although Waigeo is a possible locality of collection of the neotype it is impossible to pinpoint the precise geographic origin based on morphology alone. The neotype could have been packed together with material from Ambon by mistake or as a means to save storage space at a time when the value of locality data was less appreciated. The collection archive of the Koloniaal Museum was lost during re-organisations in the 1960s when the zoology collections were transferred to ZMA, making further insight into the provenance of the neotype impossible (S. Wijs, pers. comm. February 2014). Nonetheless, as detailed here it seems unrealistic that this specimen was collected on Ambon.

7. All other voucher specimens known from the central Moluccas held at the Naturalis museum in Leiden, The Netherlands (11 from Buru (RMNH 7223, ZMA 15416a-j), one from Haruku (RMNH 7197), one from Seram (RMNH 3189) and 12 from Ambon (RMNH 7297a-h, RMNH 7196, RMNH 3152, RMNH 3150, ZMA 11146a) examined by the present author in September 2010, the only specimen collected at Ambon in the collections of the Museum für Naturkunde der Humboldt Universität Berlin, Germany (ZMB 4848) (examined by Philipp et al. 1999) and one specimen from Buru at the Senckenberg Museum, Frankfurt-am-Main, Germany (SMF 56469) (reviewed by Weijola & Sweet, in press) correspond to the diagnosis given by Philipp et al. (1999) for *V. cerambonensis*. The three specimens held at the Zoologisches Forschungsmuseum Alexander Koenig, Bonn, Germany (ZFMK 70617-70619) from Seram, and one from Ambon (ZMA 11146b), also correspond to this diagnosis (Phillip et al., p. 280).

8. Philipp et al. (1999, p. 285) hypothesized that the two nominal species they recognized from Ambon are ecologically different, with *V. indicus* occupying coastal habitats, and *V. cerambonensis* areas further inland. However, the present author's

observations of monitors in the field in March and December 2009 suggest otherwise (Weijola & Sweet, 2015). Attempts to locate specimens matching the neotype of *V. indicus* on Ambon and other central Moluccan islands failed despite surveys in all major habitat zones. All 81 individuals observed at a total of nine locations on the islands of Ambon (Liang, Hitu, Soya di Atas and Teluk Ambon: 31 observations), Seram (Desa Besi: 9 obs.), Buru (Namlea, Samleko and Wamlana: 21 obs.), and Saparua (Kulur village: 20 obs.) were identified as conforming to *V. cerambonensis*. The vast majority of these observations were made in coastal habitats typical of *V. indicus* s.l., such as mangroves (13.5%), *Nipa* swamps (15%) and littoral forests and beaches (62%). Far fewer observations were made inland in low-elevation coconut plantations (3.5%), lowland forest (1.2%), lowland sago swamps (1%) and hill forest (2.5%). Published dietary studies (Philipp et al., 2007) also show that a large part of the diet of *V. cerambonensis* consists of crustaceans, which suggests that individuals often hunt and forage in mangroves or intertidal areas. Thus *V. cerambonensis* displays an almost complete overlap in use of habitat and prey compared to that of supposed *V. indicus* in New Guinea (Philipp, 1999), and the presence of two so closely related and ecologically almost identical species on Ambon is unlikely.

9. The findings of these recent investigations (Weijola & Sweet, 2015), viz., that there is only one species of *Varanus* in the central Moluccan region, are also supported by the results of other herpetological field investigations (e.g. Edgar & Lilley, 1993; A. Stubbs, pers. comm., May 2012) as well as by the testimony of several Nuaulu hunters from Teluk Sawai in northern Seram (pers. comm., March 2009).

10. Daudin's (1802) morphological description of *V. indicus* is not detailed enough to be diagnostic, and without the original type specimen the only definite indication of its identity is the asserted type locality, Ambon. As there is no credible evidence that the neotype ZFMK 70650 was collected on Ambon and its morphology disagrees with all other known specimens from Ambon, which field observations and voucher material show to be inhabited by only a single species of this genus, it cannot belong to the species described by Daudin. Instead it seems to belong to *V. chlorostigma* Gray (1831, p. 26), type locality Ravak Island off Waigeo, type specimen MNHN 2202. This name was used for mangrove monitors from 1831–1885 until Boulenger (1885, vol. 2, p. 316) regarded it as synonymous with *V. indicus*. Now, however, as current interpretations of species boundaries recognize the populations on Ambon and Ravak as belonging to separate species (e.g. Philipp et al., 1999), *V. chlorostigma* has again become valid. Under Articles 75.3.5 and 75.3.6 of the Code (not conspecific, and not from close to the type locality), the specimen ZFMK 70650 is not entirely suitable to serve as the neotype of *V. indicus*. To firmly fix the application of the specific name *indicus* to the taxon it originally denoted, to facilitate future taxonomic work on this species group, and to avoid further confusion caused by the current neotype and other type material (such as references to Brazilian *Tupinambis*), a replacement neotype from the type locality is needed. This will have the effect of reducing *V. cerambonensis* to a junior synonym of *V. indicus*, the latter being the valid name of the species from Ambon and other central Moluccan islands (e.g. Seram, Buru, Lease islands).

11. *Varanus indicus* is the name that has been widely applied to mangrove monitors throughout the SW Pacific island region between 1802 and present, with *V. chlorostigma* filling the same purpose between 1831 to 1885. Until the mid-1990s

V. indicus was considered to be a widespread and highly variable species (de Rooij, 1915, p. 149; Mertens, 1942, p. 260; Ziegler et al., 2007a). This situation has seen rapid change over the past two decades as cryptic diversity has been increasingly recognized and several of the allopatric populations have been named as separate species (e.g. Böhme & Ziegler, 1997; Böhme et al., 2002; Ziegler et al., 2007b; Koch et al., 2009; Weijola & Sweet, 2010). The taxonomic resolution will inevitably increase further as more voucher material is collected and analysed with new phylogenetic methods, and the old interpretation of *V. indicus* as a widespread tramp species continues to change. Although the name *V. indicus* has been extensively cited in the literature, many of these references will inevitably become outdated as the taxonomy is revised, regardless of whether the the name is applied in the sense of Daudin (1802), or Philipp et al. (1999). The more recent name *Varanus cerambonensis* has been less used in the literature. *Varanus chlorostigma* has not been in wide use in recent times as it was synonymized with *indicus* more than a century ago (a list of 13 additional references to *indicus* and two additional references to *cerambonensis* has been supplied separately to the ICZN Secretariat in London).

12. A suitable replacement neotype specimen for *Tupinambis indicus* is RMNH 40846 (Naturalis) (Figs. 1–3). This specimen satisfies the required qualifying conditions under Article 75.3:

- (1) It will be designated with the sole intentions of clarifying the taxonomic identity and type locality of *V. indicus*.
- (2) It is consistent with other topotypical material which is defined by having yellow markings on the dorsum arranged in a pattern of transverse bands, the presence of a yellow postocular stripe and a bi-coloured tongue.
- (3) The specimen has the following collection data: ‘Ambon, Indonesia, collected by F. Kopstein, May 1922’.
- (4) The original type specimens have been lost (as detailed in paragraphs 2 and 3), and the neotype designated by Philipp et al. (1999) belongs to a different taxon and does not originate from the type locality (as detailed in paragraph 10).
- (5) *Varanus indicus* is identified as the only known member of its genus existing on the island of Ambon and therefore the proposed neotype can be identified as consistent with the original type material.
- (6) The proposed neotype was collected at the type locality Ambon.
- (7) The proposed neotype is the property of the Naturalis Biodiversity Center Museum in Leiden, The Netherlands.

13. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the species-group taxon *Tupinambis indicus* Daudin, 1802 and designate specimen RMNH 40846 as the neotype;
- (2) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *indicus* Daudin, 1802, as proposed in the binomen *Tupinambis indicus*, as defined by the neotype designated in (1) above;
 - (b) *chlorostigma* Gray, 1831, as proposed in the binomen *Monitor chlorostigma*.

Acknowledgements

Ronald de Ruiter (*Naturalis*) and Hielke Praagman (*ZMA*) granted me access to the specimens in their care. Roger Bour, Ivan Ineich (both *MNHN*), Sonja Wijs (*Tropenmuseum*), Esther Dondorp (*Naturalis*) and Colin McCarthy (*NHM*) contributed valuable information on their collections. Fred Kraus critically revised the first draft of this text. Daniel Bennett, Glenn Shea, Patrick Couper, Roger Bour, Sam Sweet, Sven Kullander and three anonymous reviewers improved upon the final version. Alexander Stubbs shared his unpublished field observations. Johnny Kangasniemi photographed RMNH 40846. The Jenni and Antti Wihuri foundation provided a post graduate scholarship during the completion of the manuscript.

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Acknowledgement of receipt of this application was published in BZN **72**: 1.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3669

Family-group names based on *Ortalis* Merrem, 1786 (Aves, CRACIDAE): proposed conservation of either Ortalida-, Ortalis- or Ortalid- as the stem and suppression of family-group names based on *Ortalis* Fallén, 1810 (Insecta, Diptera) in the latter two instances, and acceptance of the English text of part of Article 29.3.3 of the Code as definitive in the second instance

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Abstract. The Case is brought under Articles 78.1, 81.1 and 89 of the Code to resolve a controversy surrounding the stem of family-group names based on *Ortalis* Merrem, 1786, a genus of large, pheasant-like birds (chachalacas) of the New World. This genus has a junior homonym in Diptera, *Ortalis* Fallén, 1810, and various family-group names based on the dipteran genus were proposed before anyone noticed the homonymy. Despite their invalidity under Article 39 of the Code, these dipteran names remain available names, preoccupying obvious stems for avian family-group names. A new tribe ORTALIDAINI Donegan, 2012 was proposed for the avian *Ortalis*, its non-standard stem Ortalida- being chosen under Article 29.6 of the Code to avoid homonymy with dipteran names. Subsequently, an attempt was made to emend ORTALIDAINI to ORTALISINI David, 2014, but the emended name is identical in spelling to the available dipteran name ORTALISINI Acloque, 1897. Acceptance of ORTALIDAINI as the valid spelling might be threatened as a result of the differing English and French versions of Article 29.3.3 of the Code concerning family-name stem formation, the French preventing an otherwise valid emendation of this name, but the English not. The Commission is asked to choose between (i) endorsing ORTALIDAINI Donegan, 2012 as being based on an ‘appropriate’ stem under Article 29.6; or (ii) using its plenary power to suppress ORTALISINI Acloque 1897 in favour of David (2014)’s junior homonym ORTALISINI, giving precedence to the English version of Article 29.3.3 of the Code and deeming David (2014)’s emendation to be valid on different grounds to those stated (i.e. ORTALIDAINI being inappropriate under Article 29.6); or (iii) suppressing all competing family-group names based on *Ortalis* Fallén, 1810 and making the ‘standard’ family-group name ORTALIDINI thereby capable of usage in Aves.

Keywords. Nomenclature; taxonomy; ORTALIDAINI; ORTALIDINI; ORTALINI; ORTALISINI; chachalacas; ORTALISCIDAE, CEROXYDIDAE; family-group names; stem formation; homonymy; correct original spelling; English-French discrepancy.

1. The genus *Ortalis* Merrem, 1786 (p. 40) was established with the type species *Phasianus motmot* Linnaeus, 1766 (p. 271) by monotypy. It is used today for a group

of New World gallinaceous birds known as chachalacas (CRACIDAE). Merrem's (1786) description reads as follows: 'Quod genus, cum multas sane species comprehendat, in plures phalanges dividendum videtur, quarum primam cum Linnaeo atque Brissonio *Cracem*, eam, ad quam nostra pertinet species, *Penelopen*, tertiam, ad quam *Phasianus Motmot* et similes ei referendae sunt aves, *Ortalida* appello.' [Which genus, as it indeed includes many species, is seen as divided into several groups, of which the first, in agreement with Linnaeus and Brisson, is [*Crax*]; the one to which our species [*Penelope*] pertains; and third, one to which *Phasianus Motmot* and the birds similar to it are referred, that I call [*Ortalis*.] Under Article 11.8.1 of the Code, the correct original spelling of this generic name is the nominative singular form *Ortalis*, not the accusative form *Ortalida* which is required grammatically by the preceding word 'appello' in Merrem's (1786) Latin text. 'Penelopen' (for *Penelope* Merrem, 1786), 'Meleagridem' (for *Meleagris* Linnaeus, 1758) and 'Cracem' (for *Crax* Linnaeus, 1758) appear in the same passage for the same reason. The spelling '*Ortalida*' was, nonetheless, used as valid by ornithologists for almost a century (e.g. by Lesson, 1828 (p. 217); Jardine, 1847 (p. 374); Bonaparte, 1856 (p. 875); Gray, 1867 (pp. 10–13); Sclater & Salvin, 1870 (pp. 505–511, 521, 531–543) and other authors cited by the latter). Gloger (1841, p. 373) used the spelling *Ortalis* without explanation, but after Wharton's (1879) explanation of the need for a correction, use of the spelling *Ortalis* for the chachalacas has been universal.

3. During the c.100 years of usage of the misspelled generic name '*Ortalida*' for chachalacas, *Ortalis* Fallén, 1810 (p. 17) was described in Diptera, with type species *Musca vibrans* Linnaeus, 1758 by subsequent designation of Westwood (1840, p. 149). This genus became the type of a family-group name, which was itself given a multitude of different forms and spellings during the 1800s, including the following relevant to this Case: ORTALIDES Fallén, 1810 (p. 17), ORTALIDAE sensu Swainson, 1840 (p. 378), ORTALIDIDAE sensu Harris, 1841 (p. 416) and ORTALISINI sensu Acloque, 1897 (p. 483). Several other unjustified emendations and misspellings are listed by Sabrosky (1999). Synonymy of the two names *Ortalis* was first noted in entomology by Aldrich (1933, p. 7), whereupon Ghesquière (1947, p. 691) proposed *Ortaliscus* as a replacement name for *Ortalis* Fallén, 1810 and made this the type genus of a new family, ORTALISCIDAE Ghesquière, 1947 (p. 691). Family-group names for this group of flies were discussed by Sabrosky (1946, pp.170–171) who proposed using CEROXYDIDAE for the group.

4. The dipteran 'Fam. Ortalides' was proposed by Fallén (1810, p. 15) in an entirely Latin work. This name is therefore not a French vernacular plural, but a Latin name with a non-standard ending. It was not until later (Strickland et al., 1842) that the convention of ending families with –idae, and subfamilies with –inae, became more consistently applied and much later when this was mandated. Sabrosky (1999, p. 226) recognised Fallén (1810) as the authority for family-group names based on *Ortalis* Fallén, 1810. Swainson (1840) was apparently the first to adopt a Latinised form acceptable under Articles 29.1, 29.2 and 29.3.1.1 of the Code, viz., ORTALIDAE. This spelling is a justified emendation of ORTALIDES under Articles 33.2.2 and 32.5.3.1 of the Code. Soon after, Harris (1841, p. 15) mentioned Fallén's (1810) original ORTALIDES and introduced a new spelling, ORTALIDIDAE (p. 416). He was apparently not aware of, and did not cite, Swainson's (1840) prior work or spelling. Despite the wide page-gap, Harris (1841) cited both the old and proposed new spellings, so

ORTALIDIDAE is to be regarded as a demonstrably intentional emendation under Article 33.2.1 of the Code. Inasmuch as it involves the correction of a family-level suffix, it is also a justified emendation under Articles 33.2.2 and 32.5.3.1. Like ORTALIDAE, ORTALIDIDAE is to be attributed to Fallén, 1810. Whether ORTALIDAE or ORTALIDIDAE, if either, is the ‘correct original spelling’ depends on three factors: whether the stem is correctly formed (Article 29.3), whether or not the name enjoys prevailing usage (Article 29.5), and whether there are any other competing names (one of which is discussed in the next paragraph). According to Brown (1956, p. 146), ‘ortalis’ is a Greek noun meaning ‘young bird, chick, fowl’, with the genitive form ‘ortalidos’. As a result, the etymologically correct stem for family-group name formation is ‘Ortalid-’.

5. The name ORTALISINI was introduced by Acloque (1897, p. 483) for a group of unspecified rank within the ‘tribus’ that he called Muscii (= MUSCIDAE Latreille, 1802 emend. Kirby & Spence, 1815). ‘*Ortalis* Fallén 1810’ is cited at the end of Acloque’s account (p. 484), so it seems reasonable to regard ORTALISINI as a family-group name for a sub-tribe. It was introduced without reference to previous family-group names or earlier spellings, and it differs from them in using the entire name of the type genus *Ortalis* as the stem to which a suffix is added, as permitted under Article 29.1 of the Code. ORTALISINI Acloque, 1897 is available by indication under Article 12.2.4 if it is an emendation and not a mis-spelling. Acloque (1897) made no statement of intent to change earlier spellings, and he did not cite any previous spellings, so his ORTALISINI is not an emendation under either the first or second criteria listed in Article 33.2.1 of the Code. However, he did form multiple stems for taxa of the same rank as ORTALISINI based, as for *Ortalis*, on the full names of their type genera. Within his ‘Muscii’, examples are SEPEDONINI Acloque, 1897 (p. 481) based on *Sepedon* Latreille, 1804, TEPHRITISINI Acloque, 1897 (p. 484) based on *Tephritis* Latreille, 1804 and SEPSISINI Acloque, 1897 (p. 484) based on *Sepsis* Fallén, 1810. Acloque (1897, p. 33) also formed a family-group name in Odonata as MYRMELEONINI based on *Myrmeleon* Linnaeus, 1767. Sabrosky (1999, pp. 226, 280, 302) regarded SEPEDONINI as a valid family-group name with Acloque’s authorship, but he treated SEPSISINI and TEPHRITISINI as mis-spellings and failed to mention ORTALISINI. Because ‘two or more names in the same work are treated in a similar way’, Acloque (1897)’s family-group names ending -ini based on full genus names are deemed to satisfy the requirement for ‘intentional change’ and are therefore attempted emendations under the third criterion listed in Article 33.2.1 (at least, for instances such as ORTALISINI, in which a change actually resulted). Acloque (1897)’s names are not justified emendations under Articles 33.2.2 and 32.5.3.1, though, because the suffixes are incorrectly formed: -ini is the prescribed suffix for a tribe and -ina for a subtribe (Article 29.2 of the Code) whilst, as noted above, Acloque’s ORTALISINI was proposed at an unstated rank below ‘tribus’ so should better have been spelled using a sub-tribe termination ‘-ina’. However, either as a new name or as an unjustified emendation, ORTALISINI Acloque, 1897 is an available family-group name with its own authorship. Because it has not apparently been used again, except in a reprint (Acloque 2003), ORTALISINI Acloque, 1897 does not threaten prevailing usage of the names discussed in paragraph 4.

6. Donegan (2012, p. 42) proposed a new avian family-group name ORTALIDAINI based on the type genus ‘*Ortalis* (or *Ortalida*) Merrem, 1786’. The stem Ortalida- was

chosen to ‘avoid homonymy with names used in Diptera’ (p. 42), but I did not cite all potentially conflicting names or discuss their availability. The names ORTALIDAE Fallén, 1810 (emend. Swainson, 1840), ORTALIDIDAE Fallén, 1810 (emend. Harris, 1841) and ORTALISINI Acloque, 1897 are here all considered available names whose homonymy requires avoidance under Article 29.6, in the first two instances as independently derived justified emendations the second of which is etymologically correct and in the latter instance as an unjustified emendation with incorrect termination and stem. These three names are all invalid under Article 39 of the Code because their type genus is a junior homonym of *Ortalis* Merrem, 1786, but this does not affect their status as available names either. In Donegan (2012, p. 42), I noted the prior usage of the first two of these and ‘various alternatives for, or misspellings of, those names . . . in the entomological literature (Sabrosky 1999)’. I also stated that the ‘stem for this name would ordinarily be Ortalid-’, but that stem is preoccupied by ORTALIDIDAE Fallén, 1810. Article 29.6 of the Code requires avoidance of homonymy through use of ‘an appropriate stem from the name of the type genus’, but for the chachalacas, de novo use of the entire generic name as the stem, as advised in Recommendation 29A, is not possible due to homonymy with ORTALISINI Acloque, 1897. Article 29.6 does not prescribe a course of action when both the genitive stem of the name and the stem based on the full generic name have both previously been used, but it does allow an ‘appropriate’ stem to be formed. ‘Appropriateness’ of the stem Ortalida- can be considered in the context of: (i) euphony of this combination of letters, which are in the form of a first declension nominative Latin noun in the puella group (Donegan, 2012, p. 43) so comparable to nouns ending –ida (cf. regicida, patricida); and (ii) a nod to taxonomic history, due to coincidence of this stem with the name used for almost a hundred years (albeit incorrectly) for the type genus (Donegan, 2012, pp. 4243). Other potentially ‘appropriate’ stems are also preoccupied, e.g. Ortal- by ORTALIDAE Fallén, 1810 and Ortali- by the coleopteran tribe ORTALIINI Mulsant, 1850 (p. 892). The correct attribution of the latter might better be to Crotch, 1874 (p. 274) because Mulsant (1850) used a vernacular form which is not a ‘name’ under the Code. Pakaluk et al. (1994) and Bouchard et al. (2011) treated Mulsant’s authorship as generally accepted. Neither the date of publication nor authorship of this name have any impact on the present Case.

7. David (2014, p. 99) attempted to emend ORTALIDAINI Donegan, 2012 to ORTALISINI Donegan, 2012, the original authorship being retained because David (2014) considered this a justified emendation, citing Articles 32.2.2 and 33.2.2 of the Code. David (2014), however, relied on Sabrosky (1999)’s list of family names in Diptera without carrying out further online searches and was therefore unaware of ORTALISINI Acloque, 1897. This makes moot all of David (2014)’s other arguments. It is relevant to this Case, however, that his reasoning centred on a misconception that Donegan (2012) had based ORTALIDAINI on the full original misspelling *Ortalida* of the type genus when the stem Ortalida- was expressly formed under Article 29.6 as an ‘appropriate’ stem to avoid homonymy and continuing usage of *Ortalis* as a genus name was expressly endorsed. It might seem attractive to state that David (2014) contains an unjustified emendation to a junior homonym and leave things at that. Certainly, at present, ORTALIDAINI is the only proposed spelling which can currently be treated as correct under a reasonable interpretation of the Code. However, doing no more than asserting this results in an unstable situation. In particular, the spelling

ORTALIDAINI could potentially be threatened by other emendations on the grounds that other spellings are more 'appropriate', particularly with reference to Articles 29.3.3 and 29.4 of the Code.

8. Under Article 29.4 of the Code, the spelling of a new family-group name such as ORTALIDAINI, with a derivation that 'does not follow the grammatical procedures of Articles 29.3.1 or 29.3.2' (i.e. the 'traditional stem' rules), is to be maintained and cannot be emended if the name has a 'correctly formed suffix' under Article 29.2 of the Code, which this name does, and if it is 'formed from the name of the type genus as though it were an arbitrary combination of letters [Art. 29.3.3]'. Article 29.3.3 sets out rules for formation of stems for names not based in Greek or Latin, so it is not directly relevant to the description of ORTALIDAINI, which is based on the Greek noun ὀρταλῖς (ortalis) and whose validity as a spelling is governed solely by Article 29.6. However, other emendations (for example to the spellings 'ORTALISIINI' or 'ORTALISAINI', neither of which is currently preoccupied or here formally proposed in Aves) could perhaps be attempted in future on the basis that ORTALIDAINI is 'inappropriate' for purposes of Article 29.6 (for example due to relevance of Articles 29.3.3–29.4 by analogy) and hence is an incorrect original spelling under Article 32.4. Assuming that the requirements under Article 32.4 could be considered satisfied for any such emendation, which is not entirely clear, then the validity of the amendment would turn on Article 29.4. To judge whether the last condition of Article 29.4 is met, it is necessary to consider the English and French versions of Article 29.3.3 separately, because they are worded quite differently. The English version states that 'the stem for the purposes of the Code is . . . *either* the entire generic name (see Article 29.6), *or* the entire generic name with the ending elided, *or* the entire generic name with one or more appropriate linking letters incorporated in order to form a more euphonious family-group name' (emphasis added). Application of this provision would allow emendations to ORTALIDAINI (if the latter is not considered based on an 'appropriate' stem) because the stem Ortalida- is formed by *both* an elision (of 's') *and* the addition of linking letters ('da'). Under the French version of the Code, however, ORTALIDAINI would be protected from any future emendation. The opening text of Article 29.3.3 is similar to the English version up to the words 'new family-group taxon'. The French Code then lists two (not three) ways of enacting modifications. The second of these is: 'soit la nom de genre avec sa terminaison élidé, *et* une ou plusieurs lettres de liaison ajoutées . . . ' [or it be the generic name with its ending elided, *and* one or more connecting letters added . . .] (emphasis added). The French wording thus requires a combination of *both* elision and the addition of linking letters from the starting point of the full generic name if the latter is modified for euphony, and such a combination describes precisely the process by which ORTALIDAINI can be formed. It seems likely that 'et' in the passage quoted above is a mistranslation for what should have been 'ou': the Preface to the Fourth Edition of the Code (p. XVI) notes that the French version largely represents a translation of a near-final working draft of the English. The text of any other authorised version of the Code will depend on whether the English or French was used as the basis for translation; at least the authorised Russian and Japanese editions reflect the English text in this respect.

9. Subsequent to Donegan (2012) the chachalacas have been recognised taxonomically at the family-group level by various authors (Del Hoyo et al., 2014; McMullan & Donegan, 2014), one of which (Remsen et al., 2014) has postponed changing its

treatment while this Case progresses. Ornithological and linguistic authorities specialising with Aves and the Research Coordinating Committee on Avian Nomenclature (RCCAN) have been consulted concerning other possible solutions to this situation. In the absence of any consensus among reviewers of this Case and leading ornithological nomenclature experts as to how it should be handled, it appears that only the Commission has the ability to resolve it definitively.

10. There are three options here presented. The main purpose of this Case is to resolve this controversy and stabilise nomenclature. Given what could be considered a personal conflict as author of one of these name spellings, I will not express any preference:

(a) Option 1 would be to endorse ORTALIDAINI Donegan, 2012 as a correct original spelling. The name has had two instances of usage of which I am aware, largely originating with the author (McMullan & Donegan, 2014, Donegan in Remsen, et al., 2014). In favour of this approach, homonymy with previously used names has already been avoided in the original description and no suppression or choice between different language versions of the Code is necessary to adopt this approach. ORTALIDAINI was the originally published name, so a decision to conserve it might also promote stability and ease of usage and reference.

(b) Option 2 would be to conserve ORTALISINI Donegan, 2012 emend. David, 2014, which has one instance of usage of which I am aware, in the form ORTALISINAE (Del Hoyo et al., 2014). This would require suppression of ORTALISINI Acloque, 1897, which has no material modern usage. The language discrepancy in Article 29.3.3 also requires addressing under Option 2, since the issue of whether the original spelling ORTALIDAINI is capable of being emended at all, and thus whether David's (2014) proposed replacement ORTALISINI can be treated as a justified emendation (even with its rationale recast), depends on this. Under Option 2, the original spelling ORTALIDAINI would be deemed not to have been based upon an 'appropriate' stem for purposes of Article 29.6 and David (2014)'s emendation would be deemed recast as being valid on that basis, despite the rationale presented therein. Option 2 would promote greater universality in formation of family-group names than Option 1 and involves fewer suppressions than Option 3. However, this requires a view to be taken on the primacy of different language versions of the Code, an issue which may have repercussions for other names even if the French edition is mis-translated. An obvious secondary impact would be for family group names based on genera or with endings which look Latin or Greek but actually have a different etymology. An example is the current controversy between the spellings TACHURIDIDAE Ohlson, Irestedt, Ericson & Fjeldså, 2013 (which is valid under the French version of Articles 29.3.3 and 29.4 of the Code) and TACHURISIDAE Ohlson, Irestedt, Ericson & Fjeldså, 2013 emend. Franz, 2015 (which is valid under the English version of Articles 29.3.3 and 29.4 of the Code) for names based on *Tachuris* Lafresnaye, 1836 (formerly, TYRANNIDAE: Aves). It is unclear as a matter of principle that names based on what looks like a traditional stem should be invalidated, although this is what the English language version of the Code provides. It may therefore be better to consider issues arising from conflicts between these different versions of the Code, and an appropriate resolution to them, only following a detailed review of potential impacts on other family-group names for animals. For completeness, a further sub-option B within Option 2 allows precedence to the English version of Article 29.3.3 to

be afforded only in this particular case, which would avoid other possible disruptions.

(c) Option 3 resolves the situation by suppressing all conflicting and invalid but available names based on *Ortalis* Fallén, 1810 (namely ORTALIDIDAE Fallén, 1810, ORTALIDAE Fallén, 1810 and ORTALISINI Acloque, 1897). This avoids the need to address conflicts between the French and English versions of the Code and results in the chachalacas having a standard stem which is easy to remember for users and more acceptable to classical linguists. Donegan (2012)'s reliance upon an unusual appropriate stem under Article 29.6 and David (2014)'s usage of the full genus name would both thereby be made retroactively unnecessary, making Ortalid- the correct stem and ORTALIDINI the correct name under Articles 29.1 and 29.3.1.

10. The International Commission on Zoological Nomenclature is accordingly asked:

Option 1

- (1) to use its plenary power to rule that the family-group name ORTALIDAINI Donegan, 2012 is available with this spelling and authorship, as a result of it being formed based on an 'appropriate' stem for purposes of Article 29.6 of the Code notwithstanding, to the extent this is relevant to 'appropriateness' of the stem Ortalida-, its nonconformity with the specifications of Article 29.3.3 of the English edition of the Code in the event that an otherwise valid emendation were to be attempted to be made thereto;
- (2) to place on the Official List of Generic Names in Zoology the name *Ortalis* Merrem, 1786 (gender: feminine), type species *Phasianus motmot* Linnaeus, 1766, by monotypy, the type genus of ORTALIDAINI Donegan, 2012;
- (3) to place on the Official List of Specific Names in Zoology the name *motmot* Linnaeus, 1766, published in the binomen *Phasianus motmot* (the type species of *Ortalis* Merrem, 1786);
- (4) to place on the Official List of Family-Group Names in Zoology the name ORTALIDAINI Donegan, 2012, with the endorsement that it is available with this spelling and authorship as ruled in (1) above;
- (5) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology the name ORTALISINI David, 2014, deemed an unjustified emendation of ORTALIDAINI Donegan, 2012.

Option 2:

- (1) to use its plenary power to rule that the family-group name ORTALISINI Donegan, 2012, a justified emendation by David (2014) of ORTALIDAINI Donegan, 2012, is available with this spelling and authorship, notwithstanding its homonymy (rendered irrelevant as a result of ruling (2) below) with ORTALISINI Acloque, 1897 and, notwithstanding the rationale presented by David (2014), on the basis that ORTALIDAINI Donegan, 2012 is an incorrect original spelling not formed based on an 'appropriate' stem for purposes of Article 29.6;
- (2) to suppress for all nomenclatural purposes the family-group name ORTALISINI Acloque, 1897;
- (3) to rule under Article 89 that Article 29.3.3, line 6, of the French edition of the Fourth Edition of the Code should read 'ou' not 'et' and that the

corresponding text in the English edition (also found in other official language editions of the Code, to the extent this English text is translated faithfully in them) shall be deemed definitive:

- (a) generally, henceforth;
- (b) only in relation to the present case;
- (4) to place on the Official List of Generic Names in Zoology the name *Ortalis* Merrem, 1786 (gender: feminine), type species *Phasianus motmot* Linnaeus, 1766, by monotypy, the type genus of ORTALISINI Donegan, 2012;
- (5) to place on the Official List of Specific Names in Zoology the name *motmot* Linnaeus, 1766, as published in the binomen *Phasianus motmot* (the type species of *Ortalis* Merrem, 1786);
- (6) to place on the Official List of Family-Group Names in Zoology the name ORTALISINI Donegan, 2012, a justified emendation by David (2014) of ORTALIDAINI Donegan, 2012, with the endorsements that it is available with this spelling and authorship as ruled in (1) above and that it is not to be deemed a junior homonym of ORTALISINI Acloque, 1897, the latter having been suppressed in (2) above;
- (7) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology the following names:
 - (a) ORTALIDAINI Donegan, 2012, an incorrect original spelling (not having been formed based on an ‘appropriate’ stem under Article 29.6 of the Code) of ORTALISINI Donegan, 2012;
 - (b) ORTALISINI Acloque, 1897, as suppressed in (2) above.

Option 3:

- (1) to use its plenary power to rule that the family-group name ORTALIDINI Donegan, 2012, is available with this spelling and authorship, notwithstanding its homonymy (rendered irrelevant as a result of ruling (2) below) with ORTALIDIDAE Fallén, 1810;
- (2) to suppress the following family-group names for the purposes of both the Principle of Priority and Principle of Homonymy:
 - (a) ORTALIDIDAE Fallén, 1810;
 - (b) ORTALIDAE Fallén, 1810;
 - (c) ORTALISINI Acloque, 1897;
- (3) to place on the Official List of Generic Names in Zoology the name *Ortalis* Merrem, 1786 (gender: feminine), type species *Phasianus motmot* Linnaeus, 1766 by monotypy, the type genus of ORTALIDINI Donegan, 2012;
- (4) to place on the Official List of Specific Names in Zoology the name *motmot* Linnaeus, 1766, as published in the binomen *Phasianus motmot* (the type species of *Ortalis* Merrem, 1786);
- (5) to place on the Official List of Family-Group names in Zoology the name ORTALIDINI Donegan, 2012, with the endorsements that it is available with this spelling and authorship as ruled in (1) above and that it is not to be deemed a junior homonym of ORTALIDIDAE Fallén, 1810, the latter having been suppressed in (2) above; and
- (6) to place on the Official Index of Rejected and Invalid Family-Group Names in Zoology the following names:

- (a) ORTALIDAINI Donegan, 2012, an incorrect original spelling (under Articles 29.1 and 29.3.1 of the Code, as a result of the suppressions of names in (2) above) of ORTALIDINI Donegan, 2012;
- (b) ORTALIDIDAE Fallén, 1810, as suppressed in (2) above;
- (c) ORTALIDAE Fallén, 1810, as suppressed in (2) above;
- (d) ORTALISINI Acloque, 1897, as suppressed in (2) above;
- (e) ORTALISINI David, 2014, deemed an unjustified emendation (under Articles 29.1 and 29.3.1 of the Code, as a result of the suppressions of names in (2) above) of ORTALIDINI Donegan, 2012.

Acknowledgements

This case benefitted from several helpful discussions with and constructive comments of Richard Schodde, Laurent Raty, Neal Evenhuis, Edward Dickinson, one other person and four anonymous ICZN Commissioners.

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Acknowledgement of receipt of this application was published in BZN **71**: 146.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Comment on *Acarus putrescentiae* Schrank, 1781 (currently *Tyrophagus putrescentiae*; Acari Acariformes, ACARIDAE): proposed conservation of usage by designation of a replacement neotype

(Case 3501; see BZN 67: 24–27; 71: 99–102)

Johannes Klompen

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I express my support for conservation of usage of the name *Tyrophagus putrescentiae*, rather than limiting that name to a rare form from Australia while proposing a new name for the extremely common, cosmopolitan species currently referred to by that name. Not conserving this very well established name in favour of either a rarely (if ever) used senior synonym or a new name, would be highly disruptive and serve very little purpose.

Comments on *Collohmanna* Sellnick, 1922 (Arachnida, Acari, Oribatida): proposed conservation by giving it precedence over the senior subjective synonym *Embolacarus* Sellnick, 1919

(Case 3674; see BZN 72: 33–40)

(1) Gerd Alberti

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I strongly support Case 3674 proposed by Norton and Sidorchuk for retaining the generic name *Collohmanna* instead of replacing it with the senior synonym *Embolacarus*. During my admittedly non-taxonomic studies on *Collohmanna gigantea*, I never came across *Embolacarus*. It is evidently hardly used in the literature. The many serious arguments for keeping *Collohmanna* are very convincing in my opinion.

(2) Heather C. Proctor

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Collohmanna is a well-known name that has appeared in many papers relevant to arachnid systematics and evo-devo in addition to publications that are more mite-specific. The fact that the type (and only) specimen of the species bearing the senior synonym's name has been lost is further reason to allow conservation of *Collohmanna*.

(3) Heinrich Schatz

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I have worked with oribatid mites for more than 40 years, especially on morphology and taxonomy. The argument given by the authors is consequential and comprehensible. I strongly support this opinion.

(4) Evert E. Lindquist

Canadian National Collection of Insects and Arachnids - Acarology Unit, Science & Technology Branch, Agriculture & Agri-Food Canada, K.W. Neatby Bldg., 960 Carling Avenue, Ottawa ON K1A 0C6, Canada (e-mail: lindquistm@primus.ca)

A strong case has been clearly presented, regarding the wealth and diversity of information from various scientific disciplines under the name *Collohmanna*, such that this name should be conserved over the older name *Embolacarus* if these names include species which are considered to represent the same genus.

With Norton and Sidorchuk proceeding with formally proposing the synonymy of these two genera, I assume that the type-species of *Embolacarus*, *E. pergratus* Sellnick, 1919, would be treated as *Collohmanna pergrata* (Sellnick, 1919), until such time as a taxonomic case is made to justify *pergratus* as representing a separate subgenus, *Collohmanna (Embolacarus) pergrata* (Sellnick), or genus, *Embolacarus pergratus* Sellnick. Thus, I fully support what eventually may be the domino effect of this case if it receives approval by the Commission.

(5) Michael Heethoff

Ecological Networks, Technical University of Darmstadt, Schnittspahnstraße 3, D-64287 Darmstadt, Germany (e-mail: heethoff@bio.tu-darmstadt.de)

Collohmanna is a well-established genus and is commonly known and used in numerous morphological, ecological and molecular studies, whereas *Embolacarus* is only known from the fossil record, and the type (and only specimen) is lost.

Hence, I completely agree with the authors that renaming all extant *Collohmanna* as *Embolacarus* would generate a lot of confusion and long-term inconsistencies in databases and literature citations, while providing hardly useful future perspectives since all extant species belong to the genus *Collohmanna* in the family COLLOHMANNIIDAE. I hope that the Commission is willing to apply Article 23.9.3 to reverse the precedence of *Embolacarus* and *Collohmanna*, and will follow the proposals of Case 3674.

(6) Valerie Behan-Pelletier

Canadian National Collection of Insects & Arachnids, Agriculture and Agri-Food Canada, K.W. Neatby Bldg. 960 Carling Ave., Ottawa, ON K1A 0C6 Canada (e-mail: Valerie.Behan-Pelletier@agr.gc.ca)

As indicated in the application the name *Collohmanna* is very widely used in oribatid citations, whereas the use of *Embolacarus* is both rare and obscure. Furthermore, *Collohmanna* is the name used in research and publications on chemical ecology, ethology and molecular and morphological phylogeny. As with all my colleagues, a distinct habitus and associated information comes to mind when I hear or see the name *Collohmanna*; *Embolacarus* elicits no such association.

Letters in support of Case 3674 stating similar views were received from:

Gerd Weigmann, *Institute for Zoology, Freie Universitaet Berlin, Koenigin Luise Str. 1-3, D-14195 Berlin, Germany (e-mail: weigmann@zedat.fu-berlin.de);*

Ziemowit Olszanowski, *Department of Animal Taxonomy and Ecology, A. Mickiewicz University, Umultowska 89, 61-614 Poznan, Poland (e-mail: olszanow@amu.edu.pl);*

Louise Coetzee, *The National Museum, Bloemfontein, P.O. Box 266, Bloemfontein, 9300, South Africa* (e-mail: louise.coetzee@nasmus.co.za);

Johannes Klompen, *Department of Evolution, Ecology & Organismal Biology, Ohio State University, 1315 Kinnear Road, Columbus OH 43212, U.S.A.*
(e-mail: klompen.1@osu.edu)

Comment on the proposed precedence of *Prionocerus bicolor* Redtenbacher, 1868 (Insecta, Coleoptera, CLEROIDEA, PRIONOCERIDAE) over *P. pertii* Laporte de Castelnau, 1836

(Case 3511; BZN 67: 137–139; 70: 204)

Michael A. Ivie

Montana Entomology Collection, Marsh Lab, Rm 50, Montana State University, Bozeman, Montana, 59717, U.S.A. (e-mail: mivie@montana.edu)

I strongly support the proposal of Geiser in Case 3511, to continue prevailing usage of the name *Prionocerus bicolor* Redtenbacher, 1868 over the forgotten senior synonym *P. pertii* Laporte de Castelnau, 1836. This is perhaps the most common and widely recognized species in this group, and a change of the name serves no purpose whatsoever. The number of published usages required for automatic suppression should be seen only as a way to lessen the need for submission of clear cases to the Commission, who are overburdened as it is. However, lack of that arbitrary number of references should be seen not as a lack of reason for the action, but simply as a chance for review of the Case. In this Case, I would like to argue that stability is the goal, and that approval of the Case best serves stability. To not approve this Case would require a change to a name no one knows, no one uses and that would require all links to knowledge already recorded be accessed through the junior name anyway. I strongly beseech the Commission to approve this petition.

Comment on the proposed precedence of *Maculinea* van Eecke, 1915 over *Phengaris* Doherty, 1891 (Lepidoptera, LYCAENIDAE)

(Case 3508; see BZN 67: 129–132; 245, 315–319; 68: 292–293; 70: 52–53; 250–251)

Stanislav K. Korb

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I am not supporting Case 3508 for the following reasons:

1. *Maculinea* Van Eecke, 1915 is a generic-group name with type species *Papilio alcon* [Denis & Schiffermüller], 1775 and, in 'old' papers, also includes the following species: *M. arion* (Linnaeus, 1758), *M. nausithous* (Bergsträsser, 1779), *M. cyanecula* (Eversmann, 1848), *M. arionides* (Staudinger, 1887), *M. teleius* (Bergsträsser, 1779) and *M. kurentzovi* Sibatani, Saigusa & Hirowatari, 1994, as well as some taxa of uncertain status. All these species have a Palaearctic-only distribution.

2. *Phengaris* Doherty, 1891 is a generic-group name with type species *Lycaena atroguttata* Oberthür, 1876 and, in 'old' papers, also includes the species *P. albida* Leech, 1893 and *P. daitozana* Wileman, 1911. All these species have a Palaetropic-only distribution.

3. Both names are available and represent two natural groups of two different biomes, occupying similar habitats. They have similar external features because of convergent evolution; genital features are similar because of their conservative organisation in this very young group (for generic differences in blue butterflies male genitalia see e.g. Zhdanko, 1983). Molecular similarity can be also explained by the group's young age.

4. I revised the Palaearctic part of this group (Korb, 2011) and designated name-bearing types, including the neotype of *M.alcon*. The representatives of 'true' *Phengaris* have also been comparatively studied. In fact we have two isolated groups of closely related organisms. According to this logic both generic group names should stay in use in zoological nomenclature and systematics. Of course these taxa are subjective, and this is one more reason not to make changes to the nomenclature too quickly. We must predict the possibility of future changes in systematics, and to preserve its stability we should just follow the Code's requirements and only use the Commission's power in extraordinary cases. Case 3508 is far from extraordinary. If the matter can be easily solved by using the Code, I do not see any point in asking the Commission to use its power.

5. Both names, for example, can easily be used as subgenera, which is probably the wisest taxonomic course that can be taken in this case.

6. As it was shown several times, both groups form the same cluster on phylogenetic trees (Fric et al., 2007) and so, they could be considered synonyms. According to Article 23 of the Code we should just use the Principles of Coordination and Priority to treat both names as synonyms, as we normally do in many cases without affecting the stability of nomenclature at all, which is one more reason to reject this proposal.

Additional references

- Fric, Z., Wahlberg, N., Pech, P. & Zrzavý, J. 2007. Phylogeny and classification of the *Phengaris-Maculinea* clade (Lepidoptera: Lycaenidae): total evidence and phylogenetic species concepts. *Systematic Entomology*, **32**: 558–567.
- Korb, S.K. 2011. A review of subgenus *Maculinea* van Eecke, 1915 of the genus *Phengaris* Doherty, 1891 (Lepidoptera: Lycaenidae) of Palaearctic fauna. *Eversmannia*, **27–28**: 22–46.
- Zhdanko, A.B. 1983. Determination keys of the blue butterflies (Lepidoptera, Lycaenidae) of the USSR fauna. *Entomologicheskoe Obozrenie*, **62**(1): 131–152.

Comment on *Anolis chlorocyanus* Dumeril & Bibron, 1837 and *Anolis coelestinus* Cope, 1862 (Reptilia, Squamata): proposed conservation of the specific names and designation of a neotype for *A. chlorocyanus*

(Case 3672; see BZN 72: 45–49)

Mark J. Grygier

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Paragraph 4 of Case 3672 provides a list of 'the diagnostic traits of the taxonomic species [*Anolis*] *coelestinus* of current usage', but the authors cite no original source. Is this perhaps a newly compiled list abstracted from the authors' upcoming

monograph? Conversely, Paragraph 8 says that the proposed neotype ‘represents the taxonomic species *A. chlorocyamus* of current usage.’ This is an unsupported assertion inasmuch as no similar list of diagnostic traits for this latter species is provided or referenced; only the vague comparative diagnosis of Barbour (1935) is quoted. There is also no demonstration of how well the proposed neotype exhibits those traits. The nice photos in Fig. 1 probably do show the traits in question, but what precisely they are is a mystery. Any ordinary proposal of a neotype must address in a satisfactory way all the ‘qualifying conditions’ of Article 75.3 of the Code, but this Case neglects Articles 75.3.2 and 75.3.4. Although the Commission has the power to endorse the present neotype nomination despite the missing information, I urge the authors to supplement their application with a statement that explicitly and fully addresses Articles 75.3.2 and 75.3.4, and also mention the source(s) of the specific diagnoses used.

OPINION 2354 (Case 3518)***Cornu* Born, 1778 (Mollusca, Gastropoda, Pulmonata, HELICIDAE):
request for a ruling on the availability of the generic name granted**

Abstract. The Commission has ruled under Articles 78.2.3 and 80.2.1 that the wording of Article 1.3.2 be interpreted to confirm the availability of *Cornu* Born, 1778 for a genus of land snails (family HELICIDAE), that was based on a teratological specimen of *Helix aspersa* Müller, 1774.

Keywords. Nomenclature; taxonomy; Mollusca; Gastropoda; Pulmonata; HELICIDAE; *Helix*; *Cantareus*; *Cornu*; *Cryptomphalus*; *Cornu copiae*; *Helix aperta*; *Helix aspersa*; brown garden snail; Europe.

Ruling

- (1) The International Commission on Zoological Nomenclature has ruled, as a result of its interpretation of Article 1.3.2 of the Code, that the name *copiae* Born, 1778, as published in the binomen *Cornu copiae*, is not unavailable by reason of being based on a teratological specimen, as it was not explicitly described as such.
- (2) The name *Cornu* Born, 1778 (gender: neuter), type species by monotypy *Cornu copiae* Born, 1778, is hereby placed on the Official List of Generic Names in Zoology, with the endorsement that it is based on an available type species, as ruled in (1) above.
- (3) The entry on the Official List of Specific Names in Zoology for the name *aspersa* Müller, 1774, as published in the binomen *Helix aspersa*, is hereby amended to record that this is the valid name of the type species of *Cornu* Born, 1778 (a senior subjective synonym of *copiae* Born, 1778, as published in the binomen *Cornu copiae*).

History of Case 3518

An application to suggest a possible interpretation of Article 1.3.2 in relation to the availability of the generic name *Cornu* Born, 1778 for a genus of land snails (family HELICIDAE) was received from Robert H. Cowie (*Center for Conservation Research and Training, Pacific Biosciences Research Center, University of Hawaii, Honolulu, Hawaii, U.S.A.*) on 25 February 2010. After correspondence the case was published in BZN **68**: 97–104 (June 2011). The title, abstract and keywords of the case were published on the Commission's website. Comments on this case were published in BZN **68**: 282–292; **69**:124–127, 219–221, 279 and **70**: 41.

Decision of the Commission

On 5 June 2014 the members of the Commission were invited to vote on the proposals published in BZN **69**: 90. At the close of the voting period on 5 September 2014 the votes were as follows:

Affirmative votes – 18: Alonso-Zarazaga, Ballerio, Bogutskaya, Brothers, Fautin, Halliday, Kottelat, Krell, Kullander, Ng, Pape, Patterson, Rosenberg, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 3: Bouchet, Harvey and Kojima.

Split votes – 2: Grygier: For (1) and (2), Against (3); Lamas For (1) and (2), Against (3).

Pyle and Štys were on leave of absence.

Voting FOR, Brothers said that since there was no clear direct evidence in Born's original publication that he was deliberately naming a particular teratological form/specimen (as differentiated from his naming of other genera/species), there cannot be any grounds for considering the name unavailable. Voting AGAINST, Bouchet said that although he accepted Cowie's demonstration that the name *Cornu copiae* was not established for a teratological specimen 'as such' in Code parlance, he could not avoid thinking that we should probably not expect O.F. Müller in the 18th century to have embraced 20th or 21st century concepts or written with 20th or 21st century vocabulary. For more than 200 years, the name *Cornu copiae* had been treated in the literature as denoting a teratological specimen, and Walden's (1976) resurrection of the name, although technically nomenclaturally acceptable, is certainly not in line with the purpose of the 'Principle of Priority' to promote stability. Walden's action has been a source of such instability that Cowie's application became necessary. By voting AGAINST the placement of *Cornu* Born, 1778, on the Official List, Bouchet believed he followed the spirit of the Code if not its letter. Kojima, who voted AGAINST, said the Commission could have voted on a different proposal, i.e., to use its plenary power to suppress the name *Cornu* Born, 1778 based on the fact that its type species, *Cornu copiae* Born, 1778 was described based on an aberrant or teratological specimen and it was not clear whether Born (1778) treated the type specimen of *Cornu copiae* Born, 1778 as an aberrant or normal individual. SPLITTING his vote, Grygier said that the final comment by Welter-Schultes et al. (BZN 70: 41) included an alternative proposal to place *Cornu* on the Official Index, which was not presented to the Commissioners in the Voting Paper for the Case. Although this proposal was not accompanied by a request for any additional ruling of substance, the Commission is fully empowered to place names on the Official Lists and Indexes without any additional qualification (Article 80.6.4). Grygier agreed with the same Comment that declaring *aspersa* to be the valid name for *copiae* on the Official List would be premature, and thus voted against proposal (3). This opinion was shared by Lamas, who also SPLIT his vote.

Original references

The following are the original references to the names placed on the Official Lists by the ruling given in the present Opinion:

- aspersa*, Helix, Müller, 1774, *Vermium terrestrium et fluviatilium, seu Animalium infusoriorum, helminthicorum, et testaceorum, non marinorum, succincta historia. volumen alterum*. Heineck & Faber, Havniae & Lipsiae, p. 59.
- Cornu*, Born, 1778, *Index rerum naturalium Musei Caesarei Vindobonensis. Pars Ima Testacea. Verzeichniß der natürlichen Seltenheitendesk. k. Naturalien Cabinets zu Wien. Erster Theil. Schalthiere*. xlii, 458, [82] pp., 1 pl. J.P. Kraus, Vindobonae, p. 371.

OPINION 2355 (Case 3581)***Turbo bidens* Linnaeus, 1758 (Gastropoda, CLAUSILIIDAE): request to set aside the neotype not granted**

Abstract. The Commission has declined to fix the neotype of *Helix papillaris* Müller, 1774 as neotype for *Turbo bidens* Linnaeus, 1758. As a result, *Turbo bidens* is not a senior synonym of *Helix papillaris* (currently *Papillifera papillaris*). Instead the neotype for *Turbo bidens* designated by Kadolsky (2009) is allowed to stand.

Keywords. Nomenclature; taxonomy; Gastropoda; CLAUSILIIDAE; *Cochlodina incisa*; *Papillifera bidens*; stylommatophoran pulmonate snails; Europe.

Ruling

- (1) The Commission has declined to use its plenary power to set aside the neotype designated by Kadolsky (2009) for *Turbo bidens* Linnaeus, 1758 and designate as neotype in its place the neotype of *Helix papillaris* Müller, 1774.
- (2) The name *papillaris* Müller, 1774, as published in the binomen *Helix papillaris*, and defined by the neotype designated by Giusti & Manganelli (2005, p. 132, Fig. on p. 133) is hereby placed on the Official List of Specific Names in Zoology;
- (3) The entry for *Turbo bidens* Linnaeus, 1758 on the Official List of Specific Names in Zoology is hereby emended to read: *bidens*, *Turbo*, Linnaeus, 1758, *Systema Naturae*, Ed. 10, vol. 1, p. 767, as defined by the neotype designated by Kadolsky, 2009 (pp. 27–28, Figs. 3b, 4) (Gastropoda).

History of Case 3581

An application to conserve two specific names of gastropods, *Turbo bidens* Linnaeus, 1758 (currently *Papillifera bidens*) and *Clausilia incisa* Küster, 1876 (currently *Cochlodina incisa*), by setting aside the neotype designated by Kadolsky (2009) for *Turbo bidens* and designating as neotype in its place the neotype of *Helix papillaris* Müller, 1774 was received from Francisco W. Welter-Schultes (*Zoologisches Institut, Göttingen, Germany*) on 13 December 2011. After correspondence the Case was published in BZN 69: 85–87 (June 2012) (proposals referred to as Set A). The title, abstract and keywords of the Case were published on the Commission's website. Adverse and supportive comments were published in BZN 69: 213–218; 280; 70: 43–46; 108–110. An alternative set of proposals was published by D. Kadolsky in BZN 69(3): 218 (repeated below as Set B):

Set A

The International Commission on Zoological Nomenclature was asked:

- (1) to use its plenary power to set aside all previous type fixations for the name *bidens* Linnaeus, 1758, as published in the binomen *Turbo bidens*, and to designate as neotype specimen no. MZUF 24432 deposited in the Museo di Storia Naturale dell'Università degli Studi di Firenze, Sezione Zoologica 'La Specola' (figured by Giusti & Manganelli, 2005, p. 133);

- (2) to emend the entry on the Official List of Specific Names in Zoology for the name *bidens* Linnaeus, 1758, as published in the binomen *Turbo bidens*, to record that it is defined by the neotype designated in (1) above.

Set B

The International Commission on Zoological Nomenclature was asked:

- (1) to place the name *Papillifera papillaris* (Müller, 1774), as published in the binomen *Helix papillaris* and defined by a neotype (Giusti & Manganelli, 2005: 132, Fig. on p. 133), on the Official List of Specific Names in Zoology;
- (2) to amend the entry on the Official List of Specific Names in Zoology of the name *Turbo bidens* Linnaeus, 1758 to read: *bidens*, *Turbo*, Linnaeus, 1758, *Systema Naturae*, Ed. 10, vol. 1, p. 767, as defined by a neotype proposed by Kadolsky, 2009 (pp. 27–28, Figs. 3b, 4) (Gastropoda).

The Case was sent for vote on 5 June 2014 (VP 14).

Decision of the Commission

At the close of the voting period on 5 September 2014 the votes were as follows:

SET A:

(2/3 majority needed for approval under the plenary power)

Affirmative votes – 8: Alonso-Zarazaga, Ballerio, Bouchet, Grygier, Kojima, Krell, Ng and Zhou.

Negative votes – 15: Bogutskaya, Brothers, Fautin, Halliday, Harvey, Kottelat, Kullander, Lamas, Pape, Patterson, Rosenberg, van Tol, Winston, Yanega and Zhang.

Pyle and Štys were on leave of absence.

SET B

(simple majority needed for approval under the specific powers)

Affirmative votes – 14: Bogutskaya, Brothers, Fautin, Halliday, Harvey, Kottelat, Kullander, Lamas, Pape, Patterson, Rosenberg, van Tol, Yanega and Zhang.

Negative votes – 8: Alonso-Zarazaga, Ballerio, Bouchet, Grygier, Kojima, Krell, Ng and Winston.

Zhou abstained.

Pyle and Štys were on leave of absence.

Voting FOR Set A and AGAINST Set B, Bouchet commented that this was a 230-year old Case where modern authors with an erudite knowledge of European land snails still disagree, and no decision by the Commission would satisfy both camps. Voting for Welter-Schultes' initial proposal, he believed that this was the pragmatic solution most likely to bring long-term stability, although some of the facts behind this choice might have been incorrect as argued by Kadolsky. Voting AGAINST Set A and FOR Set B, Rosenberg said that in Opinion 2176 the Commission had declined to conserve *Helix papillaris* against *Turbo bidens*, which some authors had regarded as a senior synonym. This did not mean that the Commission agreed with the synonymy; that is the realm of taxonomy, not nomenclature. Taxonomists who did not agree with the subjective synonymy did not have to follow it. In not designating a neotype, the Commission left open the question of the identity of the species. Kadolsky's (2009) neotype designation was a reasonable

interpretation of the available evidence, although not the only possible one. Under the rules of priority, this neotype designation should stand, he added. This opinion was shared by Winston who also voted in the same way as Rosenberg.

Original references

The following is the original reference to the name placed on the Official List by the ruling given in the present Opinion.

papillaris, *Helix*, Müller, 1774, *Vermium terrestrium et fluviatilium, seu animalium infusoriorum, helminthicorum, et testaceorum, non marinorum, succincta historia. vol. n alterum*, Heineck & Faber, Havniæ & Lipsiæ, p. 120.

OPINION 2356 (Case 3594)***Ecdyonurus* Eaton, 1868 and *Ephemera venosa* Fabricius, 1775 (currently *Ecdyonurus venosus*; Insecta, Ephemeroptera): usage conserved by designation of a neotype for *Ephemera venosa***

Abstract. The Commission has conserved the prevailing usage of the generic name *Ecdyonurus* Eaton, 1868 and the specific name *Ecdyonurus venosus* (Fabricius, 1775), by setting aside the existing name-bearing type of *Ecdyonurus venosus* and designating a neotype.

Keywords. Nomenclature; taxonomy; Insecta, Ephemeroptera; HEPTAGENIIDAE; *Ecdyonurus*; *Ecdyonurus venosus*; mayflies.

Ruling

- (1) Under the plenary power the International Commission on Zoological Nomenclature has set aside all previous type fixations for the name *Ephemera venosa* Fabricius, 1775 and designated as neotype the male imago specimen in the Natural History Museum, London (labelled Wales, Cardiganshire, Tregarron, 30.vi.1930, E.M. Moseley).
- (2) The name *Ecdyonurus* Eaton, 1868 (gender: masculine), type species by original designation *Ephemera venosa* Fabricius, 1775 is hereby placed on the Official List of Generic Names in Zoology.
- (3) the name *venosa* Fabricius, 1775, as published in the binomen *Ephemera venosa* and as defined by the neotype designated in (1) above is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3594

An application to conserve the usage of the names *Ecdyonurus* Eaton, 1868 and *Ephemera venosa* Fabricius, 1775 (currently *Ecdyonurus venosus*; Insecta, Ephemeroptera) by designation of a neotype for *Ephemera venosa* was received from Ernst Bauernfeind (*clo Naturhistorisches Museum Wien, Burgring 7, A-1010 Wien, Austria*) and Arne Haybach (*Anden Mühlwegen 23, D-55129 Mainz, Germany*) on 11 May 2012. After correspondence the Case was published in BZN 69: 254–259 (December 2012). The title, abstract and keywords of the Case were published on the Commission's website. A supportive comment was published in BZN 70: 112.

The Case was sent for vote on 3 September 2014 (VP 17).

Decision of the Commission

At the close of the voting period on 3 December 2014 the votes were as follows:

Affirmative votes – 19: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Krell, Kullander, Lamas, Pape, Rosenberg, van Tol, Winston, Zhang, Zhou & Yanega.

Negative votes – 2: Kojima, Štys.

Kottelat, Ng, Patterson & Pyle were on leave of absence.

Voting FOR, Bouchet said that he understood the facts behind the Case and voted FOR the proposals, but regretted that the neotype did not come from Fabricius's type locality, i.e. Denmark. Also voting FOR, Grygier said that the latter half of paragraph 15 wrongly treated '*Ecdyonurus* sensu Kimmins (1942) et auct. sequ.' as a junior homonym of *Ecdyonurus* Eaton, 1868. The former has no such status and no separate availability; *Ecdyurus* Eaton, 1868 is not its replacement, but simply the next most senior available synonym of Eaton's *Ecdyonurus*, but this quibble did not affect the substance of the Case.

Voting AGAINST, Kojima said that the purpose of this proposal was quite ambiguous. The current usages of *Siphonurus* Eaton, 1868 and *Ecdyonurus* Eaton, 1868 could be conserved by application of Article 70.3.2 without any intervention of the Commission, as the authors of this proposal clearly mentioned. However, the plenary power of the Commission was required to conserve the usage of *Ecdyonurus venosus* (Fabricius, 1775) instead of using the specific name *venosus* Fabricius, 1775 in combination with the generic name *Siphonurus* Eaton, 1868; however, this proposal mentioned little about why the usage of *Ecdyonurus venosus* (Fabricius, 1775) itself should be conserved. Also voting AGAINST, Štys said that the application was deficient in proposing a usage of the name *Ephemera venosa* F., 1775 for *Ecdyonurus venosus* sensu Kimmins (1942) et auct. (in HEPTAGENIIDAE) but not for sensu Fabricius (1775) in SIPHLONURIDAE although a Fabricius syntype is extant. By a suitable usage of the plenary power of the Commission, the homonymy between siphonurid and heptageniid 'venosus' could have been avoided, and the names concerned retained.

Original references

The following are the original references to the names placed on the Official Lists by the ruling given in the present Opinion:

Ecdyonurus Eaton, 1868, *Transactions of the Linnean Society, London (Zoology)*, 2(3): 142.
venosa, *Ephemera*, Fabricius, 1775, *Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*. Officina Libraria Kortii, Flensburgi & Lipsiae, p. 304.

OPINION 2357 (Case 3607)

***Haltica schillingii* Letzner, 1847 (currently *Dibolia schillingii*; Insecta, Coleoptera, CHRYSOMELIDAE): no precedence given over *Petalopus metallicus* Motschulsky, 1845 (currently *Dibolia metallica*)**

Abstract. The Commission has not used its plenary power to conserve the name *Dibolia schillingii* (Letzner, 1847) for a flea-beetle species (CHRYSOMELIDAE, ALTICINAE; or GALERUCINAE, ALTICINI) widespread in western Palaearctic, by giving it precedence over the unused older name *Dibolia metallica* (Motschulsky, 1845), whenever these names are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Coleoptera; CHRYSOMELIDAE; *Dibolia*; *Haltica* (*Dibolia*) *schillingii*; *Petalopus metallicus*; flea-beetle; Palaearctic.

Ruling

- (1) The Commission has not used its plenary power to give the name *schillingii* Letzner, 1847, as published in the binomen *Haltica schillingii*, precedence over the name *metallicus* Motschulsky, 1845, as published in the binomen *Petalopus metallicus*, whenever the two are considered to be synonyms;
- (2) No names have been placed on the Official Lists or Indexes in this ruling.

History of Case 3607

An application to conserve the name *Dibolia schillingii* (Letzner, 1847) for a flea-beetle species (CHRYSOMELIDAE, ALTICINAE; or GALERUCINAE, ALTICINI) by giving it precedence over the unused older name *Dibolia metallica* (Motschulsky, 1845), whenever these names are considered to be synonyms, was received from Manfred Döberl (*Seeweg 34, 93326 Abensberg, Germany*) and Ivan Löbl (*Muséum d'histoire naturelle, Geneva, Switzerland*) on 22 September 2012. After correspondence the Case was published in BZN **69**: 266–270 (December 2012). The title, abstract and keywords of the Case were published on the Commission's website. No comments were received on this case. The Case was sent for vote on 3 September 2014 (VP 20).

Decision of the Commission

At the close of the voting period on 3 December 2014 the votes were as follows:

Affirmative votes – 9: Ballerio, Brothers, Grygier, Halliday, Kojima, Rosenberg, Winston, Zhou & Yanega.

Negative votes – 12: Alonso-Zarazaga, Bogutskaya, Bouchet, Fautin, Harvey, Krell, Kullander, Lamas, Pape, Štys, van Tol and Zhang

Kottelat, Ng, Patterson & Pyle were on leave of absence.

Voting FOR, Yanega said, that while the case did not technically satisfy Article 23.9.1, the name *schillingii* was demonstrably in prevailing use, by any of the criteria given in the present Code.

Voting AGAINST, Alonso-Zarazaga said that he could not see any benefit in this case in subverting the Principle of Priority, since the species involved was unimportant. Also voting AGAINST, Krell said that it was true that the majority of authors had not followed the Code (the Principle of Priority), but some had until recently. If non-compliance with the Code was not universal, he would rather side with the Code-compliant authors.

No names have been placed on the Official Lists or Indexes in this ruling.

OPINION 2358 (Case 3458)

***Balintus* d'Abrera, 2001, *Gulliveria* d'Abrera & Bálint, 2001, *Salazaria* d'Abrera & Bálint, 2001, *Megathecla* Robbins, 2002 and *Gullicaena* Bálint, 2002 (Insecta, Lepidoptera, LYCAENIDAE): priority maintained**

Abstract. The Commission has not approved the request to rule under its plenary power on the status of several generic names in the LYCAENIDAE. Instead, under Articles 78.2.3 and 81.2.4 of the Code, the Commission, using its specific powers, confirms the availability of all the new generic names proposed in d'Abrera (2001) and consequently the availability of any replacement names proposed for any of them.

Keywords. Nomenclature; taxonomy; LYCAENIDAE; *Annamaria*; *Balintus*; *Chopinia*; *Eucharia*; *Gullicaena*; *Gulliveria*; *Lamasina*; *Lucilda*; *Megathecla*; *Pedusa*; *Riojana*; *Salazaria*; hairstreak butterflies; Neotropics.

Ruling

- (1) The International Commission on Zoological Nomenclature has declined to use its plenary power merely to rule that the following generic names are deemed to be available:
 - (a) *Balintus* d'Abrera, 2001 (gender: masculine), type species by original designation *Pseudolycaena tityrus* C. Felder & R. Felder, 1865;
 - (b) *Gulliveria* d'Abrera & Bálint in d'Abrera, 2001 (gender: feminine), type species by original designation *Thecla gigantea* Hewitson, 1867, a junior homonym of *Gulliveria* Castelnau, 1878;
 - (c) *Salazaria* d'Abrera & Bálint in d'Abrera, 2001 (gender: feminine), type species by original designation *Thecla sala* Hewitson, 1867;
 - (d) *Megathecla* Robbins, 26 June 2002 (gender: feminine), replacement name for *Gulliveria* d'Abrera & Bálint, 2001, type species *Thecla gigantea* Hewitson, 1867;
 - (e) *Gullicaena* Bálint, 30 November 2002 (gender: feminine), replacement name for *Gulliveria* d'Abrera & Bálint, 2001; type species *Thecla gigantea* Hewitson, 1867, a junior objective synonym of *Megathecla* Robbins, (26 June) 2002.
- (2) Under Articles 78.2.3 and 81.2.4 of the Code, the Commission, using its specific powers, confirms the availability of all new generic names proposed in d'Abrera (2001) and consequently the availability of any replacement names proposed for any of them.
- (3) The following generic names are hereby placed on the Official List of Generic Names in Zoology.
 - (a) *Balintus* d'Abrera, 2001 (gender: masculine), type species by original designation *Pseudolycaena tityrus* C. Felder & R. Felder, 1865;
 - (b) *Salazaria* d'Abrera & Bálint in d'Abrera, 2001 (gender: feminine), type species by original designation *Thecla sala* Hewitson, 1867;

- (c) *Megathecla* Robbins, (26 June) 2002 (gender: feminine), replacement name for *Gulliveria* d'Abrera & Bálint in d'Abrera, 2001, type species *Thecla gigantea* Hewitson, 1867, a senior synonym of *Gullicaena* Bálint in d'Abrera, (30 November) 2002;
- (d) *Annamaria* d'Abrera & Bálint in d'Abrera, 2001 (gender: feminine), type species by original designation *Thecla draudti* Lathy, 1926;
- (e) *Chopinina* d'Abrera, 2001 (gender: feminine), type species by original designation *Thecla mazurka* Hewitson, 1867;
- (f) *Lucilda* d'Abrera & Bálint in d'Abrera, 2001 (gender: feminine), type species by original designation *Thecla crines* Druce, 1907;
- (g) *Pedusa* d'Abrera, 2001 (gender: feminine), type species by original designation *Thecla pedusa* Hewitson, 1867;
- (h) *Riojana* d'Abrera & Bálint in d'Abrera, 2001 (gender: feminine), type species by original designation *Thecla thargelia* Burmeister, 1878.

History of Case 3458

An application to establish by plenary power the availability of *Balintus* d'Abrera, 2001, *Gulliveria* d'Abrera & Bálint, 2001, *Salazaria* d'Abrera & Bálint, 2001, *Megathecla* Robbins, 2002, and *Gullicaena* Bálint, 2002 was received from Robert K. Robbins (*Smithsonian Institution, National Museum of Natural History, Washington, DC, U.S.A.*) and Gerardo Lamas (*Museo de Historia Natural, Universidad Nacional Mayor de San Marcos, Lima, Peru*) on 25 March 2008. After correspondence the Case was published in BZN **65**: 188–193 (September 2008). The title, abstract and keywords of the Case were published on the Commission's website. Adverse and supportive comments were published in BZN **66**: 271–272, 349–351; **68**: 206–211; **69**: 60–61, 281–283; **70**: 201; 250.

The Case was sent for vote on 5 June 2014 (VP 8).

Decision of the Commission

At the close of the voting period on 5 September 2014 the votes were as follows:

Affirmative votes – 3: Halliday, Pape & Zhou.

Negative votes – 13: Alonso-Zarazaga, Brothers, Grygier, Harvey, Kojima, Kottelat, Krell, Kullander, Ng, Rosenberg, van Tol, Winston and Zhang.

Split votes – 3:

Ballerio:

For (1), (2a), (2b), (2c), (3a), (3b), (3c), (4a), (4d), (4h); Against (2d), (3d), (4b), (4c), (4e), (4f) (4g);

Bouchet:

For (1), (2a), (2b), (2c), (2d), (3a), (3b), (3c), (3d); Against (4a), (4b), (4c), (4d), (4e), (4f), (4g), (4h);

Yanega:

For (1), (2a), (2b), (2c), (2d), (3a), (3b), (3c), (3d), (4a), (4b), (4c), (4d), (4h); Against (4e), (4f), (4g).

Abstained – 4: Bogutskaya, Fautin, Lamas & Patterson.

Pyle and Štys were on leave of absence.

Voting FOR, Pape said that for names proposed after 1930, the Code explicitly allowed for combined descriptions of a new genus-group taxon and a single included new nominal species. To qualify for a combined description, it must be ‘marked by “gen. nov., sp. nov.” or an equivalent expression’ (Article 13.4), and he took this to mean that the description must unambiguously refer to both the genus-group name and the species-group name. Thus, it was not sufficient that the description of the nominal species-group taxon be associated with the genus-group name by implication, by perceived intent, by indication, or similar. The eight genus-group names proposed by d’Abrera and by d’Abrera & Bálint in d’Abrera (2001), for which they differentiated the type species, not the genus, were therefore not Code-compliant and as such were unavailable. Voting AGAINST, Alonso-Zarazaga said that the names proposed for conservation were proposed very recently in a way non-compliant with the Code. It was the authors’ responsibility to know the Code and propose their taxa in a compliant way. Since these names had no special interest except for specialists and their usage by other authors was still minimal, the present authors should have proposed these names again to validate them. He also disagreed that the Commission should intervene to allow bad practices. Also voting AGAINST, Brothers said that the application was misleading in not reflecting the true layout of the original treatment for *Annamaria* (used as an exemplar), which created an incorrect impression and even introduced punctuation not present in the original. The application also misrepresented some aspects of the content of Robbins (2002), in which, for example, there was no mention of *Chopinina*. He voted against the application in its entirety, and requested that the Commission confirm the availability of all the generic names proposed in d’Abrera (2001), should the votes not indicate otherwise. Grygier, who also voted AGAINST, said that he was willing to recognise an expression of the form, ‘However, distinguished from Genus A...’, as constituting the lead-in to a generic, not merely specific, diagnosis. ABSTAINING, Kojima said that the application was made based on an incorrect interpretation of grammatical subjects that were omitted in the original descriptions of the eight genera under consideration. Anyone writing a taxonomic description would never mention that a species (in this case, the type species) differed from a given genus. The implied grammatical subject of each sentence of the original description of the eight genera in d’Abrera (2001) was the genus newly described therein. Therefore, whether these generic names are available or unavailable should have been judged in accordance with the Code, without involvement of the Commission. Voting AGAINST, Krell said that Article 13.1.1 only requires that the new name be accompanied by a description or definition that states in words characters that are purported to differentiate the taxon. In his opinion this could be done by differentiating the type species. Article 13.1 did not disallow this, and he was inclined to agree with Bálint and d’Abrera’s comment that their names were available. He thought that the intention of the authors was clear, and that we did not need to interpret the authors’ wording as not following their intention. Since he considered the names in question to be available, he would suggest strictly following priority and voted against.

Voting AGAINST, Kullander said that this was not a necessary application. It was clear that there was a diagnosis attached to the generic names in question, and that it was based on the type species would be obvious to a specialist alone. A diagnosis had to be present; it did not have to be relevant or correct, or true for all included species. He added that the names were available and no action by the commission was necessary. Voting AGAINST, Rosenberg said that he did not think that d'Abrera and Bálint violated Article 13.1. They did not compare the type species to another species; instead they stated why the type species could not be placed in the genus it was formerly placed in. This was an abstraction of genus level characters, and it did not matter if the statement was correct, just that it existed, he added. Therefore he considered the names to be available. Also voting AGAINST, Winston said that she agreed with Rosenberg that generic distinction had been made, although in a roundabout way, so no Commission action was necessary and the names were available. Kottelat, voting AGAINST, stated that he had no problem considering available the genera based on a single species, but he did not see why some of the monotypic genera would be on the Official List and some on the Official Index, apparently on the sole ground that they had been later listed in a given catalogue or not. He also did not see the need to place on the Official Index a name on apparently the sole ground that it is a junior homonym; application of priority is enough. He saw no need for the application, but indicated provisional partial agreement with some aspects but against others, although doubting that such a split vote would be possible since it implied adding proposals. SPLITTING his vote, Yanega said that he was in favour of the authors' proposals except that he did not agree that *Riojana*, *Lucilda* and *Pedusa* (monotypic genera) were unavailable under Article 13.1; given how Article 13.4 works (where a monotypic genus is made available automatically if its type species is described simultaneously), he would be inclined to interpret a type species differentiation as satisfying the requirements of 13.1, by extension of a similar principle (i.e. that a new monotypic genus would be differentiated automatically if its type species were differentiated as part of the genus description).

From the comments received in voting, a consensus emerged that the names should be interpreted as compliant with Articles 13.1.1 and/or 13.4 as genus-group characters were considered in determining the placement of the type species. Under Article 78.4.2, these names are entered on the *Official List* (as the subject of rulings in an Opinion).

Original references

The following are the original references to the names placed on the Official Lists by the ruling given in the present Opinion:

- Annamaria* d'Abrera & Bálint in d'Abrera, 2001, *The concise atlas of butterflies of the world*. Hill House Publishers, Melbourne & London, p. 194.
- Balintus* d'Abrera, 2001, *The concise atlas of butterflies of the world*. Hill House Publishers, Melbourne & London, p. 195.
- Chopinia* d'Abrera, 2001, *The concise atlas of butterflies of the world*. Hill House Publishers, Melbourne & London, p. 196.
- Lucilda* d'Abrera & Bálint in d'Abrera, 2001, *The concise atlas of butterflies of the world*. Hill House Publishers, Melbourne & London, p. 194.
- Megathecla* Robbins, (26 June) 2002, *Proceedings of the Entomological Society of Washington*, **104**: 820.

Pedusa d'Abrera, 2001, *The concise atlas of butterflies of the world*. Hill House Publishers, Melbourne & London, p. 195.

Riojana d'Abrera & Bálint in d'Abrera, 2001, *The concise atlas of butterflies of the world*. Hill House Publishers, Melbourne & London, p. 195.

Salazaria d'Abrera & Bálint in d'Abrera, 2001, *The concise atlas of butterflies of the world*. Hill House Publishers, Melbourne & London, p. 195.

OPINION 2359 (Case 3573)***Papilio narcissus* Fabricius, 1798 (currently *Heteropsis narcissus*; Lepidoptera, NYMPHALIDAE): specific name conserved**

Abstract. The Commission has conserved the specific name *Heteropsis narcissus* (Fabricius, 1798), despite being a junior homonym of *Hypochrysops narcissus* (Fabricius, 1775). Both names are currently in use to designate separate and well-recognized species, belonging to two distinct genera in two butterfly families from different geographic regions.

Keywords. Nomenclature; taxonomy; NYMPHALIDAE; LYCAENIDAE; SATYRINAE; THECLINAE; *Hypochrysops*; *Heteropsis*; *Hypochrysops narcissus*; *Heteropsis narcissus*; Narcissus Jewel; Madagascar; Comoros; Mascarenes; Mauritius; Australia.

Ruling

- (1) Under the plenary power, the International Commission on Zoological Nomenclature has ruled that the name *narcissus* Fabricius, 1798, as published in the binomen *Papilio narcissus*, is not invalid by reason of being a junior primary homonym of *Papilio narcissus* Fabricius, 1775.
- (2) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *narcissus* Fabricius, 1775, as published in the binomen *Papilio narcissus*;
 - (b) *narcissus* Fabricius, 1798, as published in the binomen *Papilio narcissus*, with the endorsement that it is not invalid by reason of being a junior primary homonym of *narcissus* Fabricius, 1775, as published in the binomen *Papilio narcissus*, as ruled in (1) above.

History of Case 3573

An application to conserve the specific name *Heteropsis narcissus* (Fabricius, 1798), despite being a junior homonym of *Papilio narcissus* Fabricius, 1775 was received from Emilio Balletto (*Dipartimento di Biologia Animale, Torino, Italy*) and David C. Lees (*Department of Life Sciences, Natural History Museum, London, U.K.*) on 6 October 2012. After correspondence the Case was published in BZN 69: 260–265 (December 2012). The title, abstract and keywords of the Case were published on the Commission's website. No comments were received for this Case. The Case was sent for vote on 3 September 2014 (VP 18).

Decision of the Commission

At the close of the voting period on 3 December 2014 the votes were as follows:

Affirmative votes – 21: Alonso-Zarazaga, Ballerio, Bogutskaya, Brothers, Bouchet, Fautin, Grygier, Halliday, Harvey, Kojima, Krell, Kullander, Lamas, Pape, Rosenberg, Štys, van Tol, Winston, Zhang, Zhou & Yanega.

Kottelat, Ng, Patterson & Pyle were on leave of absence.

Original references

The following are the original references to the names placed on the Official Lists by the ruling given in the present Opinion:

narcissus, *Papilio*, Fabricius, 1775, *Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*. *Officina Libraria Kortii*, Flensburgi & Lipsiae, p. 524, n°. 342.

narcissus, *Papilio*, Fabricius, 1798, *Supplementum entomologiae systematicae*. Proft & Storch, Hafniae, p. 427.

OPINION 2360 (Case 3602)***Coenosia* Meigen, 1826 and COENOSIINAE Verrall, 1888 (Insecta, Diptera, MUSCIDAE): usage of the genus-group and family-group names conserved**

Abstract. Under the plenary power, the Commission has conserved the usage of the generic name *Coenosia* Meigen, 1826, for a well-established genus of muscid flies. All type fixations for *Coenosia* Meigen, 1826 prior to that of *Musca tigrina* Fabricius, 1775 by Westwood (1840) have been set aside. Also under the plenary power, the family-group name COENOSIINAE Verrall, 1888 has been given precedence over LIMOSIINAE Robineau-Desvoidy, 1830 whenever the two are placed in the same family-group taxon.

Keywords. Nomenclature; taxonomy; Diptera; MUSCIDAE; *Coenosia*; *Musca tigrina*; COENOSIINAE; LIMOSIINAE; muscid flies; cosmopolitan.

Ruling

- (1) Under the plenary power the International Commission on Zoological Nomenclature:
 - (a) has set aside all previous type species fixations for the nominal genus *Coenosia* Meigen, 1826 before that of *Musca tigrina* Fabricius, 1775 by Westwood (1840);
 - (b) has given precedence to the family-group name COENOSIINAE Verrall, 1888 over LIMOSIINAE Robineau-Desvoidy, 1830 whenever the two are placed in synonymy in the same family-group taxon.
- (2) The name *Coenosia* Meigen, 1826 (gender: feminine), type species *Musca tigrina* Fabricius, 1775 by subsequent designation by Westwood (1840), as ruled in (1a) above, is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *tigrina* Fabricius, 1775 as published in the binomen *Musca tigrina* (specific name of the type species of *Coenosia* Meigen, 1826, as ruled in (1a) above) is hereby placed on the Official List of Specific Names in Zoology.
- (4) The name COENOSIINAE Verrall, 1888 (type genus *Coenosia* Meigen, 1826) is hereby placed on the Official List of Family-Group Names in Zoology, with the endorsement that it is to be given precedence over LIMOSIINAE Robineau-Desvoidy, 1830, whenever the two are placed in synonymy in the same family-group taxon as ruled in (1b) above.
- (5) The name LIMOSIINAE Robineau-Desvoidy, 1830 is hereby placed on the Official List of Family-Group Names in Zoology, with the endorsement that it is not to be given priority over COENOSIINAE Verrall, 1888, whenever the two are placed in synonymy in the same family-group taxon as ruled in (1b) above.

History of Case 3602

An application to set aside all previous type species fixations for the generic name *Coenosia* Meigen, 1826 and for the family-group name COENOSIINAE Verrall, 1888 to

be given precedence over LIMOSIINAE Robineau-Desvoidy, 1830 whenever the two are placed in the same family-group taxon was received from Neal L. Evenhuis (*J. Linsley Gressitt Center for Research in Entomology, Bishop Museum, Honolulu, Hawaii, U.S.A.*) and Adrian C. Pont (*Oxford University Museum of Natural History, Oxford, U.K.*) on 26 May 2012. After correspondence the case was published in BZN 69: 271–275 (December 2012). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this Case. The Case was sent for vote on 3 September 2014 (VP 22).

Decision of the Commission

At the close of the voting period on 3 December 2014 the votes were as follows:

Affirmative votes – 16: Ballerio, Bogutskaya, Brothers, Fautin, Halliday, Harvey, Kojima, Krell, Kullander, Lamas, Pape, Rosenberg, Winston, Zhang, Zhou & Yanega.

Negative votes – none.

Split votes – 5: Alonso-Zarazaga, Bouchet, Grygier, Štys and van Tol (all five voted FOR (1)(a), (2), (3), (4)(a), (b); AGAINST (1)(b), (4), (5))

Kottelat, Ng, Patterson & Pyle were on leave of absence.

SPLITTING his vote, Alonso-Zarazaga said that there was no need to reverse the precedence because of the synonymy of the type genus. He also noted that in para. 9 of the original application, the incorrect LIMOSELLINAE had been used instead of the correct LIMOSIINAE, which should be corrected in the Opinion. Also SPLITTING his vote, Bouchet said that he was not in favour of replacing the name COENOSIINAE by the name LIMOSIINAE, but he viewed conditional reversal of precedence as a source of instability, and thus objected to this proposal. A proposal to place LIMOSIINAE on the Official Index would have been a better solution. Grygier, who also SPLIT his vote, said that little harm seemed likely to arise from following the Code with respect to the family-group names. It would have been useful to know what proportion of the usages of COENOSIINAE in the list submitted to the Secretariat were post-1999 (i.e. post-Sabrosky). Also SPLITTING his vote, Štys said that numerous valid family-group names were based on junior subjective synonyms and he could not see the reason for making this routine matter an anti-priority issue in this situation.

Original references

The following are the original references to the names placed on the Official Lists by the ruling given in the present Opinion:

- Coenosia* Meigen, 1826, *Systematische Beschreibung der bekannten europäischen zweiflügeligen Insekten*. Fünfter Theil. Schulz-Wundermann, Hamm, p. 210.
 COENOSIINAE Verrall, 1888, *A list of British Diptera*. Pratt & Co., London, p. 24.
 LIMOSIINAE Robineau-Desvoidy, 1830, *Mémoires présentés par divers savants à l'Académie Royale des Sciences de l'Institut de France (Sciences Mathématiques et Physiques)*, (2)2: 528.
tigrina, Fabricius, 1775, *Systema entomologiae, sistens insectorum classes, ordines, genera, species, adiectis synonymis, locis, descriptionibus, observationibus*. Officina Libraria Kortii, Flensburgi & Lipsiae, p. 779.

The following is the original reference to the type species designation cited in this ruling:

Westwood, J.O. 1840. Order XIII. Diptera Aristotle. (Antliata Fabricius. Halteriptera Clairv.)
in: An introduction to the modern classification of insects; founded on the natural habits and corresponding organisation of the different families. Synopsis of the genera of British insects.
Longman, Orme, Brown, Green & Longmans, London, p. 143.

OPINION 2361 (Case 3561)***Anchisaurus* Marsh, 1885 (Dinosauria, Sauropodomorpha): usage conserved by designation of a neotype for its type species *Megadactylus polyzelus* Hitchcock, 1865**

Abstract. Under the plenary power the Commission conserved the usage of the name *Anchisaurus* Marsh, 1885 (Lower Jurassic, Connecticut Valley, northeastern U.S.A.) that is based on *Megadactylus polyzelus* Hitchcock, 1865. The fragmentary and non-diagnostic holotype of *M. polyzelus* has been replaced with a diagnostic neotype, an almost complete skull and skeleton (YPM1883, holotype of *A. colurus* Marsh, 1891).

Keywords. Nomenclature; taxonomy; Dinosauria; Sauropodomorpha; *Anchisaurus*; *Ammosaurus*; *Megadactylus*; *M. polyzelus*; Lower Jurassic; dinosaurs; northeastern U.S.A.

Ruling

- (1) Under the plenary power the International Commission on Zoological Nomenclature has set aside all previous type fixations for the name *Megadactylus polyzelus* Hitchcock, 1865 and designated specimen YPM1883 in the Peabody Museum of Natural History of Yale University as the neotype.
- (2) The name *Anchisaurus* Marsh, 1885 (gender: masculine), type species by monotypy *Megadactylus polyzelus* Hitchcock, 1865 is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *polyzelus* Hitchcock, 1856, as published in the binomen *Megadactylus polyzelus* and as defined by the neotype designated in (1) above (specific name of the type species of *Megadactylus* Hitchcock, 1865), is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3561

An application to set aside all previous type fixations for the name *Megadactylus polyzelus* Hitchcock, 1865 and to designate as neotype the specimen YPM1883 in the Peabody Museum of Natural History of Yale University was received from Peter M. Galton (*College of Naturopathic Medicine, University of Bridgeport, Bridgeport, CT, U.S.A.; Peabody Museum of Natural History, Yale University, New Haven, CT, U.S.A.*) on 19 April 2011. After correspondence the Case was published in BZN **69**: 44–50 (March 2012). The title, abstract and keywords of the case were published on the Commission's website. Comments on this case were published in **69**: 141–142; 229231; **70**: 270. The Case was sent for vote on 3 September 2014 (VP 21).

Decision of the Commission

At the close of the voting period on 3 December 2014 the votes were as follows:

Affirmative votes – 17: Alonso-Zarazaga, Ballerio, Brothers, Bouchet, Fautin, Grygier, Halliday, Harvey, Krell, Kullander, Lamas, Pape, Rosenberg, Winston, Zhang, Zhou & Yanega.

Negative votes – 4: Bogutskaya, Kojima, Štys and van Tol
Kottelat, Ng, Patterson & Pyle were on leave of absence.

Voting FOR, Brothers and Halliday noted that there was a mistake in Case 3561, paragraph 2, line 6. '*M. polydactylus*' should be '*M. polyzelus*'. Their votes assumed this was simply a typographical error. Also voting FOR, Bouchet said that he voted FOR the proposals despite the feeling that the stability of taxonomy, rather than the stability of nomenclature, is threatened by the incomplete and sometimes non-diagnostic condition of the name-bearing types involved. Voting AGAINST, Kojima said that under the current situation, as described in the proposal (i.e. the name *Anchisaurus* Marsh, 1885 is not threatened), he did not find any reasons to justify the necessity for the designation of the holotype of *Anchisaurus colurus* Marsh, 1891 as a neotype of *Megadactylus polyzelus* Hitchcock, 1865, the type species of *Anchisaurus* Marsh, 1885. Also voting AGAINST, Štys said that here the nomenclatural issues are at present irrevocably linked to unresolved taxonomical issues based on often overly fragmentary evidence. In his opinion, the ruling would be premature and possibly incompetent, and would favour one taxonomical opinion against another.

Original references

The following are the original references to the names placed on the Official Lists by the ruling given in the present Opinion:

Anchisaurus Marsh, 1885, *American Journal of Science*, (3)29: 169.
polyzelus, *Megadactylus*, Hitchcock, 1856, *A supplement to the ichnology of New England*.
Wright and Potter, Boston, p. 187.

Information and Instructions for Authors

The following notes are primarily for those preparing applications; other authors should comply with the relevant sections. Applications should be prepared in the format of recent parts of the *Bulletin*; manuscripts not prepared in accordance with these guidelines may be returned. For more detailed instructions see <http://iczn.org/content/instructions-authors>.

General. Applications are requests to the Commission to set aside or modify the Code's provisions as they relate to a particular name or group of names when this appears to be in the interest of stability of nomenclature. Authors submitting cases should regard themselves as acting on behalf of the zoological community and the Commission will treat applications on this basis. Applicants should discuss their cases with other workers in the same field before submitting applications, so that they are aware of any wider implications and the likely reactions of other zoologists.

Text. Formatted with double spacing, this should consist of numbered paragraphs setting out the details of the case and leading to a final paragraph of formal proposals. Text references should give dates and page numbers in parentheses, e.g. 'Daudin (1800, p. 49) described ...'. If the plenary power of the Commission is sought, this necessity should be clearly explained (with reference to the relevant Articles of the Code).

References. These should give all authors of a publication. Where possible, ten or more reasonably recent references should be given illustrating the usage of names that are to be conserved or given precedence over older names. The title of periodicals should be in full and in italics; number of volumes, parts, etc. should be in Arabic figures, separated by a colon from the page numbers. Book titles should be in italics and followed by the number of pages and plates, the publisher and place of publication.

Submission of application: Applications should be submitted electronically preferably by email (within the message or as an attachment) to 'iczn@nhm.ac.uk'. When submitted by post, one copy should be sent to: International Commission on Zoological Nomenclature, c/o The Natural History Museum, Cromwell Road, London SW7 5BD, U.K. The typescript should be accompanied by a disk with copy in IBM PC compatible format (disks and attachments to be in Word, rtf or ASCII text). It would also be helpful if applications were accompanied by photocopies of relevant pages of the main references where this is possible.

The Commission's Secretariat is very willing to advise on all aspects of the formulation of an application.

Illustrations

If a neotype designation is requested it is strongly advisable to submit an appropriate illustration in TIFF format of sufficiently high resolution for printing. Hardcopy figures will be accepted, at discretion of the Editor. It is desirable to illustrate both specimen and its label, with a scale bar. Furthermore, we are willing to consider illustrations of the organisms under discussion contributed simply to add visual interest to the applications. Line drawings should be high-resolution TIFFs at 600–1200 dpi; photographs may be 300–400 dpi.

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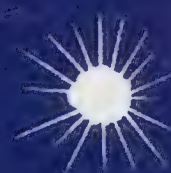
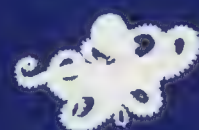
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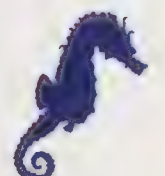
Continued on Inside Back Cover

The Bulletin of Zoological Nomenclature

The Official Periodical
of the International Commission
on Zoological Nomenclature



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ICZN

THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

The *Bulletin* is published four times a year for the International Commission on Zoological Nomenclature by the Trustees of the Natural History Museum. The annual subscription for 2016 is £250 or US\$395 or €320, postage included; individual subscribers for personal use are offered a subscription of £125 or US\$195 or €160. All manuscripts, letters and orders should be sent to:

International Commission on Zoological Nomenclature

Natural History Museum

Cromwell Road

London, SW7 5BD, U.K.

(Tel. +44 207 942 5653; e-mail: iczn@nhm.ac.uk)

Electronic communication is preferred. Manuscripts sent by post should include a digital copy of the text and figures.

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Cover image: *Octopus vulgaris* Cuvier, [1797] known as the common octopus, Illustrated by Ernst Haeckel in *Kunstformen der Natur*, pl. 54, fig. 4. The names *Octopus* and *Octopus vulgaris* were placed on the Official Lists of Generic and Specific Names in Zoology by rulings in Opinions 233 and 1681. The common octopus is remarkable amongst invertebrates for its spatial learning capacity, navigational abilities, camouflage techniques and use of tools.

BULLETIN OF ZOOLOGICAL NOMENCLATURE

Volume 72, part 3 (pp. 179–265)

30 September 2015

Notices

(1) Applications and correspondence relating to applications to the Commission should be sent to the ICZN at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each Volume and available online (at <http://iczn.org/content/guidelines-case-preparation>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will, where possible, answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should preferably be sent by e-mail to 'iczn@nhm.ac.uk'.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at <http://iczn.org/content/instructions-comments>).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to iczn@nhm.ac.uk.

New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (Volume 72, part 2, 30 June 2015) went to press. Under Article 82 of the Code, the prevailing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3693: *Cryptodacus* Hendel, 1914 (Insecta: Diptera: TEPHRITIDAE): proposed suppression of *Cryptodacus* Gundlach, 1862 (Reptilia, Serpentes, COLUBRIDAE). A.L. Norrbom, R. McDiarmid, X.-L. Chen, K.J. David, M. De Meyer, A. Freidberg, H.-Y. Han, D. Hancock, G.J. Steck, F.C. Thompson, I.M. White & R.A. Zucchi.

CASE 3694: *Pomachilius variegatus* Schwarz, 1904 (Insecta, Coleoptera, ELATERIDAE): proposed conservation of the specific name by suppression of the name *Aeolus variegatus* Curtis, 1839. P.J. Johnson.

CASE 3695: *Dimetrodon* Cope, 1878 (Synapsida, SPHENACODONTIDAE): proposed conservation by reversal of precedence with *Bathygnathus* Leidy, 1853 (Synapsida, SPHENACODONTIDAE). K.S. Brink.

CASE 3696: *Bassariscus astutus* (Lichtenstein, 1830) and *B. sumichrasti* (Saussure, 1860) (Mammalia, PROCYONIDAE): proposed suppression of subspecies. R. E. Richards.

CASE 3697: *Odontocheila* Laporte de Castelnau, 1834 (Coleoptera, CARABIDAE): proposed conservation of usage by designation of *C. cajennensis* Fabricius, 1787 as the type species. J. Moraveć.

CASE 3698: *Cicindela varians* H. Gory, 1833 (Coleoptera, CARABIDAE): proposed conservation. J. Moraveć.

ZooBank Progress Report

Frank-Thorsten Krell

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Five years have passed since the last ZooBank Progress Report was published in the *Bulletin of Zoological Nomenclature* (Krell & Pyle, 2010). While the restructuring of the ICZN Secretariat from one central London office to a dispersed operation in Singapore and London had delayed some developments of lesser priority, ZooBank has remained fully functional and has been reliably accommodating the requirements of the ICZN Amendment (ICZN, 2012). The Amendment requires ZooBank Registration for works published only in electronic form. As of 10 August, 35,298 authors, 59,937 publications and 142,957 scientific names have been registered in ZooBank, including both paper and electronic works. Apart from minor glitches which were rectified swiftly, we experienced no serious problems with ZooBank functionality. However, some aspects of registration need further explanation and more detailed regulation. In this issue of *BZN*, some common questions on registration and availability of electronic publications are addressed (Krell & Pape, 2015), including priority questions and automated registration. With respect to the preparation of the fifth edition of the International Code of Zoological Nomenclature, ZooBank Committee and the ICZN are keen to hear suggestions for the improvement of the registration process and ZooBank functionality in general.

While the functionality supporting the requirements of the Amendment had highest priority, two ZooBank Policies have been ratified, one prescribing that ZooBank registration is free of charge for authors, the other laying down the different types of ZooBank users and their privileges. Both Policies are published at the end of this report. The ZooBank Committee has continued drafting additional policies, some of them will be ready for public review later this year.

References

- ICZN. 2012. Amendment of Articles 8, 9, 10, 21 and 78 of the International Code of Zoological Nomenclature to expand and refine methods of publication. *Bulletin of Zoological Nomenclature*, **69**: 161–169.
- Krell, F.-T. & Pyle, R.L. 2010. ZooBank progress report. *Bulletin of Zoological Nomenclature*, **67**: 271–277.
- Krell, F.-T. & Pape, T. 2015. Electronic publications need registration in ZooBank to be available. *Bulletin of Zoological Nomenclature*, **72**: 245–251.

ZooBank Policy

Title: ZooBank Policy on ZooBank Users

Policy Number: 002

Author(s): Richard L. Pyle, Frank-T. Krell, Daphne Fautin

Status: DRAFT-V9

Date Review Completed: 13 April 2013

Date Recommended: 13 April 2013

Date Ratified: 3 June 2015

Effective Date: 4 June 2015

I. PURPOSE

This document defines the types of users of ZooBank, how a user type is determined, and the access privileges available to each type of user.

II. POLICY

A user is any individual person who accesses, creates, or edits content via the ZooBank website. A user of ZooBank may be anonymous or authenticated through a login procedure. A user with a login account may be authorized at one of several authentication levels, each of which includes specific access and sponsor privileges.

III. PROCEDURES

A. LOGIN ACCOUNTS

Each authenticated user of ZooBank must have a login account, which includes the following requirements:

1. Registration

Each login account is assigned to an individual person who is registered in ZooBank. An account may not be created for an organization or electronic entity such as an internet service.

2. Email Address

Each login account must include a valid and functioning email address.

3. User name

Each login account must include a unique user name that has not already been assigned to an existing login account.

4. User Agreement

To create a login account, the person creating the login account must explicitly consent to the ZooBank Authenticated User Agreement.

IV. USERS

There are five types of users; an anonymous user ('Guest') and four types of authenticated users ('Contributor', 'Verified Contributor', 'Content Editor', and 'Administrator').

A. GUEST USERS

1. Login

No login account or other authentication is required for a Guest user.

2. Read and Write Privileges

A Guest user may search on, view, and download any content via the ZooBank website *except* prospectively registered Works that have not yet been made publicly available, and any names or nomenclatural acts contained within Works that have not yet been made publicly available. A Guest user has no write privileges and may not create or edit any content via the ZooBank website.

B. AUTHENTICATED USERS

1. Contributors

- (a) Designation. A Contributor creates his or her own ZooBank account.
- (b) Read Privileges. A Contributor may search on, view, and download the following via the ZooBank website:
 - (i) All content created by him/herself;
 - (ii) All other content *except* prospectively registered Works that have not yet been made publicly available, and any names or nomenclatural acts contained within Works that have not yet been made publicly available.
- (c) Write Privileges. A Contributor may, via the ZooBank website:
 - (i) Create and register new content, and register existing unregistered content;
 - (ii) Edit any content created by the Contributor him/herself.
- (d) Verification Privileges. A Contributor may not verify other ZooBank users.

2. Verified Contributors

- (a) Designation. A Verified Contributor must be verified by another user with such verification privileges.
- (b) Read Privileges. A Verified Contributor may search on, view, and download the following via the ZooBank website:
 - (i) All content created by the Verified Contributor him/herself;
 - (ii) All content involving a Published Work of which the Verified Contributor is an author, or journal or book editor;
 - (iii) All other content *except* prospectively registered Works that have not yet been made publicly available, and any names or nomenclatural acts contained within Works that have not yet been made publicly available of which the Verified Contributor is not an author, or journal or book editor.
- (c) Write Privileges. A Verified Contributor may, via the ZooBank website:
 - (i) Create and register new content and register existing unregistered content;

- (ii) Edit content created by the Verified Contributor him/herself;
- (iii) Edit content involving Published Works of which the Verified Contributor is an author, or journal or book editor.
- (d) Verification Privileges. A Verified Contributor may not verify other ZooBank users.

3. Content Editors

- (a) Designation. A Content Editor must be established as such by another user with privileges that include establishing Content Editors.
- (b) Read Privileges. A Content Editor may search on, view, and download via the ZooBank website all content *including* prospectively registered Works that have not yet been made publicly available, as well as names or nomenclatural acts contained therein.
- (c) Write Privileges. A Content Editor may, via the ZooBank website, create or edit all unverified content.
- (d) Verification Privileges. A Content Editor may:
 - (i) Establish a Contributor as a Verified Contributor;
 - (ii) Create a Verified Contributor user account for an individual person who is not already a Contributor in ZooBank.

4. Administrators

- (a) Designation. An Administrator must be established as such by another user with privileges that include establishing Administrators, and this sponsorship must be approved by a majority of existing Administrators.
- (b) Read Privileges. An Administrator may search on, view, and download via the ZooBank website all content *including* prospectively registered Works that have not yet been made publicly available, as well as names or nomenclatural acts contained therein.
- (c) Write Privileges. An Administrator may, via the ZooBank website, create or edit any content.
- (d) Sponsor Privileges. An Administrator may:
 - (i) Establish a Contributor as a Verified Contributor;
 - (ii) Create a Verified Contributor user account for an individual person who is not already a Contributor in ZooBank;
 - (iii) Establish a Verified Contributor as a Content Editor;
 - (iv) Designate a Verified Contributor as Content Editor for a specific journal or book;
 - (v) Establish a Content Editor as an Administrator, after a majority of existing Administrators have approved such designation.

ZooBank Policy

Title: Fees for ZooBank Registration by Authors

Number: 003

Author(s): Frank-T. Krell

Status: DRAFT-V3

Date Review Completed: 25 October 2011

Date Recommended: 13 April 2013

Date Ratified: 3 June 2015

Effective Date: 4 June 2015

I. PURPOSE

This policy establishes free registration of any kind for authors.

II. POLICY

Registration of content in ZooBank by authors is free of charge.

III. PROCEDURES

n/a

Case 3689***Cognettia* Nielsen & Christensen, 1959 (Annelida, Oligochaeta, ENCHYTRAEIDAE): proposed precedence over *Euenchytraeus* Bretscher, 1906 and *Chamaedrillus* Friend, 1913**

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Abstract. The purpose of this application, under Articles 23.2 and 23.9.3 of the Code, is to conserve the usage of the genus-group name *Cognettia* Nielsen & Christensen, 1959 (ENCHYTRAEIDAE, Oligochaeta, Annelida) for a genus of annelid worms (type species *Pachydrilus sphagnetorum* Vejdovský, 1878 ('1877')). *Cognettia*, a name for a Holarctic genus of terrestrial and semi-aquatic annelid worms, is threatened by two subjective senior synonyms, *Euenchytraeus* Bretscher, 1906 and *Chamaedrillus* Friend, 1913. If these two names are considered synonyms, *Euenchytraeus* will replace *Cognettia*; if they are considered to represent two different genera, *Chamaedrillus* will replace *Cognettia*. In 2015 Martinsson et al. adopted the latter course, replacing *Cognettia* by *Chamaedrillus*, and allocated its species between both *Euenchytraeus* and *Chamaedrillus*. *Cognettia* is a widely used name and is well-known in the fields of soil biology, ecology, and ecotoxicology, and we propose it be given precedence over *Chamaedrillus* and *Euenchytraeus*, which had not been used as valid for almost a century.

Keywords. Nomenclature; taxonomy; Annelida; Clitellata; Oligochaeta; ENCHYTRAEIDAE; *Cognettia*; *Chamaedrillus*; *Euenchytraeus*; *Cognettia sphagnetorum*; enchytraeid worms; Europe.

1. Vejdovský (1878, p. 304) erected a new species of *Pachydrilus* Claparède, 1861 (ENCHYTRAEIDAE, Oligochaeta, Annelida), *P. sphagnetorum*, based on specimens found in sphagnum bogs in Central Europe. The very brief diagnosis was followed by a description with illustrations in Vejdovský (1879).

2. Michaelsen (1889, p. 28) erected the genus *Marionina* and transferred *P. sphagnetorum* to this genus, together with six other previously described species-group taxa. The generic name was later replaced by *Marionina* (Michaelsen in Pfeffer 1890, p. 511) because of the homonymy with *Marionina* Vayssière, 1877 (Mollusca) (Michaelsen, 1900, p. 73). *Marionina* remained without a type species until Brinkhurst (1971, p. 662) designated *Pachydrilus georgianus* Michaelsen, 1888a as type species.

3. Bretscher (1906, p. 673) erected the genus *Euenchytraeus* for a new species of ENCHYTRAEIDAE, collected from soils in the Swiss Alps, that had a character hitherto unknown in the family – nephridia in the head region. The species was named *Euenchytraeus bisetosus* and described in the same paper (Bretscher, 1906). The genus remained monotypic. The genus-group name was used as valid only by Sterling (1908) and Piguet & Bretscher (1913). The latter contribution gave a description of the sexual organs – Bretscher's original account was based on juvenile specimens.

4. Friend (1913a, p. 260) erected the genus *Chamaedrillus* for a species of ENCHYTRAEIDAE collected from soils in England, which he named *Chamaedrillus chlorophilus*. Later, Friend (1919) noted the close similarity of this species with *Marionina sphagnetorum* and transferred *M. sphagnetorum* to *Chamaedrillus*, together with its subspecies *M. s. glandulosus* (Michaelsen, 1888b). The genus-group name *Chamaedrillus* was used as valid only by the author himself in subsequent publications (Friend, 1913b, 1914, 1919, 1922).

5. The genera *Euenchytraeus* and *Chamaedrillus* were soon rejected in several works. Welch (1920, p. 46), in a literature-based revision of the genera of ENCHYTRAEIDAE, dealt with both genera under the heading 'genera dubia': he considered *Chamaedrillus* to be indistinguishable from *Marionina*, and *Euenchytraeus* impossible to evaluate due to the lack of information on the sexual organ, in apparent ignorance of Piguet & Bretscher (1913). Černosvitov (1937a, p. 205), after reinvestigation of voucher material of *Chamaedrillus chlorophilus* from Friend's collection, considered *Chamaedrillus chlorophilus* to be synonymous with *Marionina sphagnetorum* at the species and genus levels, confirming a previous conjecture by Delphy (1921). Later the same year, in a comprehensive literature-based revision of species and genera of ENCHYTRAEIDAE, Černosvitov (1937b, p. 277) placed *Euenchytraeus* in synonymy with *Marionina* and considered the type species of *Euenchytraeus* – classified as '*Pachydrilus (Marionina) bisetosus* (Bretscher)' – a 'species dubia' (Černosvitov, 1937b, p. 293). Thereafter, the generic names *Chamaedrillus* and *Euenchytraeus* were no longer considered or discussed in the literature until very recently (Schmelz & Collado, 2010; Martinsson et al., 2015a).

6. Nielsen & Christensen (1959, p. 41), in their monograph and revision of European ENCHYTRAEIDAE, erected *Cognettia* with the type species '*C. sphagnetorum* (Vejd.)', that is, *Pachydrilus sphagnetorum* Vejdovský, 1878. The subjective synonymy of *Cognettia* with *Chamaedrillus* went unnoticed. Four other nominal species of *Marionina* were also included in *Cognettia*. The nomenclatural and taxonomic framework established in Nielsen and Christensen (1959) was widely accepted by taxonomists and non-taxonomists; their 1959 monograph, followed by two supplements (Nielsen & Christensen, 1961, 1963) launched a new era of research with enchytraeids, particularly in the field of soil ecology.

7. Enchytraeid specimens with head nephridia – discovered in soils in Siberia (Piper et al., 1982; Christensen & Dózsa-Farkas, 1999) and in soils in the Austrian Alps (Bauer, 1993) – were described as *Cognettia piperi* Christensen & Dózsa-Farkas, 1999 and *Cognettia clarae* Bauer, 1993, respectively. Their apparent similarity with *Euenchytraeus bisetosus* Bretscher, 1906 and hence the concomitant subjective synonymy of *Cognettia* with *Euenchytraeus*, went unnoticed.

8. Schmelz & Collado (2010, p. 80), in a guide to the identification of European non-marine enchytraeid species, recognized that *Cognettia* has two subjective senior synonyms, *Euenchytraeus* and *Chamaedrillus*, and remarked that a preservation of *Cognettia* would require an application to the International Commission on Zoological Nomenclature (ICZN). They maintained the name *Cognettia* because of its common use and wide acceptance: until 2010, the genus-group name *Cognettia* had been used as valid in at least 350 scientific publications, most of them of non-taxonomic scope and content (see list of additional references) whereas *Euenchytraeus* and *Chamaedrillus* had not been used since they were judged invalid in 1937 and 1920, respectively.

9. Martinsson et al. (2015a) re-established *Chamaedrillus* and *Euenchytraeus* and distributed the species previously included in *Cognettia* amongst these two genera. The two species with head nephridia (see paragraph 7 above) were assigned to *Euenchytraeus*, and its type species *Euenchytraeus bisetosus* (previously a ‘species dubia’, see para. 5 above) was restored. The rest – *Cognettia sphagnetorum* included – were included in *Chamaedrillus*. The species name *chlorophilus* was revalidated based on combined morphological and molecular studies and the re-investigation of voucher specimens, which the authors considered to be syntypes of *Chamaedrillus chlorophilus* (Martinsson & Erséus, 2014; Martinsson et al., 2015a); *chlorophilus* and *sphagnetorum* were hence no longer considered as synonyms (see paragraph 5 above). *Cognettia sphagnetorum* auct. was split into four species, two of them new to science, and a neotype for the newly limited concept of *Ch. sphagnetorum* was designated (Martinsson et al., 2015a). *Chamaedrillus* sensu Martinsson et al. (2015a, 2015b) comprises 17 nominal species. In contrast, if *Chamaedrillus* and *Euenchytraeus* are considered synonyms, the valid name of this genus will be *Euenchytraeus*, with priority over *Chamaedrillus* and *Cognettia*.

10. *Cognettia* is a long-accepted genus-group name, and is well-known in different branches of biology and environmental research. This Holarctic genus comprises c. 18 terrestrial or semi-aquatic species of 2.5–25 mm body length that live in the uppermost soil strata. We have counted more than 400 published papers (1959 to the present day) that cite the generic name *Cognettia* as valid (a list of these works is held by the Commission Secretariat). This list would be lengthened by the inclusion of reports and scientific publications in languages other than English or German. The majority of field studies with species lists of ENCHYTRAEIDAE include the name *Cognettia*. Noteworthy is the large body of soil ecological research papers that deal with one species, *Cognettia sphagnetorum*. This mainly European species is very common and abundant in soils that are nutrient poor, yet rich in organic matter, such as boreal forests, temperate heathlands, and moorlands. With densities up to 300,000 ind./m² (Peachey, 1963), *C. sphagnetorum* influences ecosystem processes such as decomposition and nutrient cycling (e.g. Maraldo & Holmstrup, 2009 and references therein). Its pivotal role in these habitats is considered similar to that of ‘ecosystem

engineers' (Lavelle et al., 1997; Jänsch et al., 2005) – species that directly or indirectly affect the availability of resources to other organisms through modifications of the physical environment. Diverse aspects of the biology of *C. sphagnetorum* have been investigated, usually related to its role in the soil ecosystem, for example: sensitivity towards contaminants (Salminen & Haimi, 2001; Römbke & Beck, 2012), drought (Holmstrup et al., 2012), forest clear-cutting (Uhía & Briones, 2002), effects on plant growth (Laakso & Setälä, 1999), fungal growth (Hedlund & Augustsson, 1995), soil carbon and nitrogen dynamics (Briones et al., 2007; Carrera et al., 2011; Maraldo et al., 2011), and interactions with other compartments of the soil food web such as lumbricids, microarthropods and nematodes (Huhta et al., 1998; Huhta & Viberg, 1999). Other species of *Cognettia* are also common but have not been well-studied, e.g. the Holarctic *Cognettia glandulosa* (Michaelsen, 1888b), recently revised by Martinsson et al. (2015b, therein as *Chamaedrillus glandulosus*), which is abundant in some North American broadleaf-deciduous forests (Nurminen, 1973) and common in aquatic or semi-aquatic habitats in Europe. The genus name is also known to scientists and non-scientists in the field of soil ecology and forestry whose work is not focused on enchytraeids. Due to the importance of *C. sphagnetorum*, the genus-group name *Cognettia* is present in most of the recent soil biology textbooks (e.g. Lavelle & Spain, 2001; Coleman et al., 2004; Bardgett, 2005). In contrast, the names *Euenchytraeus* and *Chamaedrillus* have rarely been used after their erection (see paragraphs 3 and 4, above), and they were not used as valid after 1937 and 1920, respectively, until Schmelz & Collado (2010) drew attention to their priority over *Cognettia*.

11. Adherence to the Principle of Priority (Article 23.1 of the Code) in the case of *Cognettia* will create instability and is in opposition to its intent – to promote stability in the scientific names of animals (Preamble and Article 23.2 of the Code). Especially in view of the wide use of the name in non-taxonomic biological disciplines, *Cognettia* and its valid senior synonym would have to be used in parallel for a long time to avoid confusion. Our application to conserve the long-accepted name *Cognettia* in its accustomed meaning includes both senior synonyms, *Euenchytraeus* and *Chamaedrillus* – because either of them can be used as valid, depending on the taxonomic opinion (see paragraph 9 above).

12. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the genus-group name *Cognettia* Nielsen & Christensen, 1959 is to be given precedence over:
 - (a) *Euenchytraeus* Bretscher, 1906, whenever they are considered to be synonyms;
 - (b) *Chamaedrillus* Friend, 1913, whenever they are considered to be synonyms;
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Cognettia* Nielsen & Christensen, 1959 (gender: feminine), type species by original designation *Pachydrillus sphagnetorum* Vejdovský, 1878 with the two endorsements that:
 - (i) it is to be given precedence over *Euenchytraeus* Bretscher, 1906 whenever their type species are placed in the same genus-group taxon;
 - (ii) it is to be given precedence over *Chamaedrillus* Friend, 1913, whenever their type species are placed in the same genus-group taxon;

- (b) *Euenchytraeus* Bretscher, 1906 (gender: masculine), type species by monotypy *Euenchytraeus bisetosus* Bretscher, 1906, with the endorsement that it is not to be given precedence over *Cognettia* Nielsen & Christensen, 1959, whenever their type species are placed in the same genus-group taxon;
- (c) *Chamaedrillus* Friend, 1913 (gender: masculine), type species by monotypy *Chamaedrillus chlorophilus* Friend, 1913, with the endorsement that it is not to be given precedence over *Cognettia* Nielsen & Christensen, 1959, whenever their type species are placed in the same genus-group taxon;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *sphagnetorum* Vejdovský, 1878, as published in the binomen *Pachydrillus sphagnetorum* (specific name of the type species of *Cognettia* Nielsen & Christensen, 1959);
 - (b) *chlorophilus* Friend, 1913, as published in the binomen *Chamaedrillus chlorophilus* (specific name of the type species of *Chamaedrillus* Friend, 1913);
 - (c) *bisetosus* Bretscher, 1906, as published in the binomen *Euenchytraeus bisetosus* (specific name of the type species of *Euenchytraeus* Bretscher, 1906).

Acknowledgements

We are grateful to Tarmo Timm and Mark J. Wetzel for critically reviewing a pre-submission draft of this manuscript.

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Acknowledgement of receipt of this application was published in BZN **72**: 108.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3686***Bulimus rupestris* Philippi, 1836 (Gastropoda, Stylommatophora, CHONDRINIDAE): proposed conservation of the specific name**

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Abstract. The purpose of this application, under Article 23.9.5 of the Code, is to conserve the specific name of the terrestrial snail *Bulimus rupestris* Philippi, 1836 (currently *Rupestrella rupestris*, CHONDRINIDAE), originally published as a junior primary homonym of *Bulimus rupestris* Krynicky, 1833 (currently classified in the genus *Peristoma*, ENIDAE) by ruling under the plenary power to disregard their primary homonymy.

Keywords. Nomenclature; taxonomy; Gastropoda; Stylommatophora; CHONDRINIDAE; ENIDAE; *Bulimus*; *Rupestrella*; *Peristoma*; *Bulimus rupestris*; *Rupestrella rupestris*; *Peristoma rupestre*; terrestrial snail; Europe.

1. *Bulimus rupestris* Philippi, 1836 (p. 141), established for an Italian gastropod of the CHONDRINIDAE, type species of *Rupestrella* Monterosato, 1894, and *Bulimus rupestris* Krynicky, 1833 (p. 413) (currently *Peristoma rupestre*; ENIDAE) established for a gastropod from Crimea (Ukraine), are primary homonyms (Articles 53.3 and 57.2 of the Code). Both names are well-established and their identities are not disputed (Manganelli et al., 1995; Sysoev & Schileyko, 2009; Balashov & Gural-Sverlova, 2012; Welter-Schultes, 2012).

2. The next available name that can be used for the Italian species is *Granopupa coloba* Pilsbry, 1918 (p. 352), which is currently in use for the subspecies *Rupestrella rupestris coloba* (see Beckmann, 2002). Therefore replacing the current species name would have the potential to cause confusion in the nomenclature of its subspecies.

3. *Peristoma rupestre* (Krynicky, 1833) is a well-established name of a Crimean endemic species. After a brief survey of literature we have found 27 sources by 24 authors (including co-authors) in the last 50 years (1972–2013) where this name was used (most of them are listed in references of Balashov & Gural-Sverlova, 2012 and Sverlova et al., 2006). Probably several more sources could be found.

4. *Rupestrella rupestris* (Philippi, 1836) is a less used name. The narrow range of this species is limited to the western part of Sicilia. We only found 11 references by 22 authors in the last 50 years (Alzona, 1971; Gittenberger, 1973; Pintér & Szigethy, 1976; Manganelli et al., 1995; Cossignani & Cossignani, 1995; Beckmann, 1997, 2002;

Lo Brano & Sparacio, 2006; Kokshoorn & Gittenberger, 2010; Liberto et al., 2010; Renda et al., 2011).

5. The two species under consideration have not been considered congeneric after 1899 and were both placed in *Bulimus* only for three years in the 1830s. Rossmässler (1839) placed *Bulimus rupestris* Philippi, 1836 in *Pupa* Draparnaud, 1801 and after that this name was never classified in *Bulimus* again. *Bulimus rupestris* Krynicky, 1833 remained in *Bulimus* until the 1880s. It was placed in *Buliminus* Beck, 1837 by Retowski (1883) and remained there for more than 50 years; later the species has been referred to *Peristoma* Krynicky, 1833. These two species belong to two different Palearctic families of Orthurethra, CHONDRINIDAE and ENIDAE and are distinct at superfamilial level. Their shells look very different and cannot be confounded in museum collections.

6. Nomenclatural stability in this case would be best achieved by disregarding the primary homonymy.

7. Using the name *Granopupa coloba* Pilsbry, 1918 for the Italian species would be a possible solution, but since *Bulimus rupestris* Philippi, 1836 has been used in the recent literature and together with the names of the subspecies we would prefer to conserve its usage.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the name *rupestris* Philippi, 1836, as published in the binomen *Bulimus rupestris*, is not invalid by reason of being a junior primary homonym of *rupestris* Krynicky, 1833, as published in the binomen *Bulimus rupestris*;
- (2) to place on the Official List of Specific Names in Zoology the name *rupestris* Philippi, 1836, as published in the binomen *Bulimus rupestris*, with the endorsement that it shall not be invalid by reason of being a junior primary homonym of *rupestris* Krynicky, 1833, as published in the binomen *Bulimus rupestris*.

Acknowledgements

We are very grateful to Prof. Giuseppe Manganelli (*University of Siena, Italy*) for his help with literature on the name of the Italian species.

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Acknowledgement of receipt of this application was published in BZN 72: 107.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3690***Alabina* Dall, 1902 (Gastropoda, CERITHIOIDEA): proposed designation of the type species**

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Abstract. The purpose of this application, under Articles 65.2.2 and 70.2 of the Code, is to fix *Alaba cerithidioides* Dall, 1889 as type species of *Alabina*, as originally intended by Dall. *Alabina* Dall, 1902 (Gastropoda), is a replacement name for *Elachista* Dall & Simpson, 1901, non *Elachista* Treitschke, 1833 (Insecta). The name *Elachista* was introduced inadvertently a few weeks before its intended publication, with the consequence that its type species by monotypy is *Bittium californicum* Dall & Bartsch, 1901. Dall had intended it to be *Alaba cerithidioides* Dall, 1889, and he cited that species as type of *Alabina* in several publications. *Bittium californicum* Dall & Bartsch, 1901, and *Alaba cerithidioides* Dall, 1889, are not congeneric and not even confamilial.

Keywords. Nomenclature; taxonomy; ALABINIDAE; *Alabina*; *Alaba cerithidioides*; gastropods; western Atlantic.

1. Dall & Bartsch (1901 [3 September], p. 58) described *Bittium* (*Elachista*) *californicum* spec. nov. from the Pleistocene and (supposedly) Recent marine fauna of California. Although *Elachista* is not declared new and is not diagnosed separately, it appears in this work for the first time, and the combined subgenus and species description confer availability to both names.

2. A few weeks later, Dall & Simpson (1901 [November]) treated ‘*Elachista* Dall, 1901’ as a section heading, under the subgenus *Diastoma* of the genus *Bittium*. There, *Elachista* is diagnosed and the authors state: ‘The type may be taken as *B. cerithidioide* Dall (Trans. Wagner Inst., III, p. 276, pl. xvi, fig. 8, 1892)’. Despite the reference to Dall’s (1892) illustration of a fossil from the Miocene of Jamaica, this designates *Alaba cerithidioides* Dall, 1889, a species described from the Recent fauna of [Cape] ‘Hatteras southward’, on the eastern coast of the United States.

3. The molluscan name *Elachista* Dall, 1901 is a junior homonym of *Elachista* Treitschke, 1833 (Lepidoptera). Dall (1902, p. 127) recognized the homonymy and for ‘*Elachista* Dall and Simpson’ he established the substitute name *Alabina*. On this

occasion, he repeated that this ‘peculiar group of *Bittium* [is] typified by *B. cerithidioide* Dall’. Incidentally, the name *Elachista* Treitschke, 1833 was placed on the Official List of Genus-Group Names in Zoology by Opinion 1557 (BZN 46: 206–207; September 1989).

4. Dall (1922) later synonymised *Alabina* with *Finella* A. Adams, 1860: ‘The fortunate discovery in the collection of the National Museum of specimens of Adams’ typical species [i.e. *Finella pupoides* A. Adams, 1860, type species of *Finella* by monotypy] received from him many years ago, has enabled me to positively identify *Finella* (sic) and *Alabina* described by me in 1902’. Notwithstanding, Dall (1927) established the family ALABINIDAE, based on *Alabina*, at that occasion citing explicitly ‘*Bittium cerithidioide* Dall’ as type species.

5. Woodring (1928, pp. 338–339) accepted Dall’s synonymization of *Alabina* with *Finella*, but he (incorrectly) regarded the latter as an incorrect original spelling of *Fenella*, itself a junior homonym of *Fenella* Westwood, 1840 (Hymenoptera), and he thus used *Alabina* as a valid name, citing *Bittium cerithidioide* as type. In line with this earlier treatment of *Alabina*, Woodring (in Woodring et al. 1946, p. 68; name attributed to Woodring alone on p. 61) later established a new genus-group name *Elassum* with this comment: ‘The new generic name *Elassum* is proposed for ‘*Bittium* (*Elachista*)’ *californicum* (pl. 29, fig. 21). The preoccupied name *Elachista* was used inadvertently for that species. It is not congeneric with the Floridian and West Indian ‘*Bittium*’ *cerithidioide*, which was intended as the type of *Elachista* and is the type of *Alabina*, proposed as a substitute for *Elachista*.’

6. The taxonomy of small cerithioids is still extremely confused, and this taxonomical confusion is exacerbated by the nomenclatural instability caused by uncertainty about the type species of *Alabina*. What is certain, however, is that *Alaba cerithidioides* Dall, 1889, and *Bittium californicum* Dall & Bartsch, 1901 (Fig. 1), are not congeneric and not even confamilial. *Alaba cerithidioides* is now considered to be a junior synonym of *Finella dubia* (d’Orbigny, 1840) in the family SCALIOLIDAE [formerly OBTORTIONIDAE], a synonymy that has been accepted in authoritative catalogues (e.g. Abbott, 1974, p. 108) and modern databases (e.g. Rosenberg, 2009; WoRMS 2015). Accordingly, *Alabina* is not in current use for western Atlantic species. Starting with Gripp (1909) and Bartsch (1911), *Bittium californicum* has been placed in *Alabina* by many authors working on East Pacific faunas, including Keen (1971), which remains the classic reference for the Panamic fauna, and has influenced to this day (e.g. Perilliat & Flores-Guerrero, 2011) acceptance of *Alabina*. Alternatively, *Bittium californicum* has been treated as a species of *Finella* by Abbott (1974, p. 108), followed by Turgeon et al. (1998) and at least one database (ITIS). However, Woodring et al. (1946) and J. McLean (pers. comm.) treated *Elassum californicum* as a species in the family CERITHIIDAE, an opinion with which we concur. Apart from *californicum*, the name *Alabina* as currently used for the East Pacific fauna includes species belonging to both families, including CERITHIIDAE (e.g. *Alabina calena* Dall, 1919), but mostly SCALIOLIDAE (e.g. *Alabina excurvata* (Carpenter, 1857), *A. ignati* Bartsch, 1911), based on examination of types held in the USNM.

7. Although the family name ALABINIDAE is based on a type genus with an overlooked type species designation, stability at the family level is not at stake: in the last decades, the subfamily ALABININAE was recognized as valid only by Ponder & Warén (1988, as a subfamily of CERITHIIDAE; an opinion continued by Ponder &

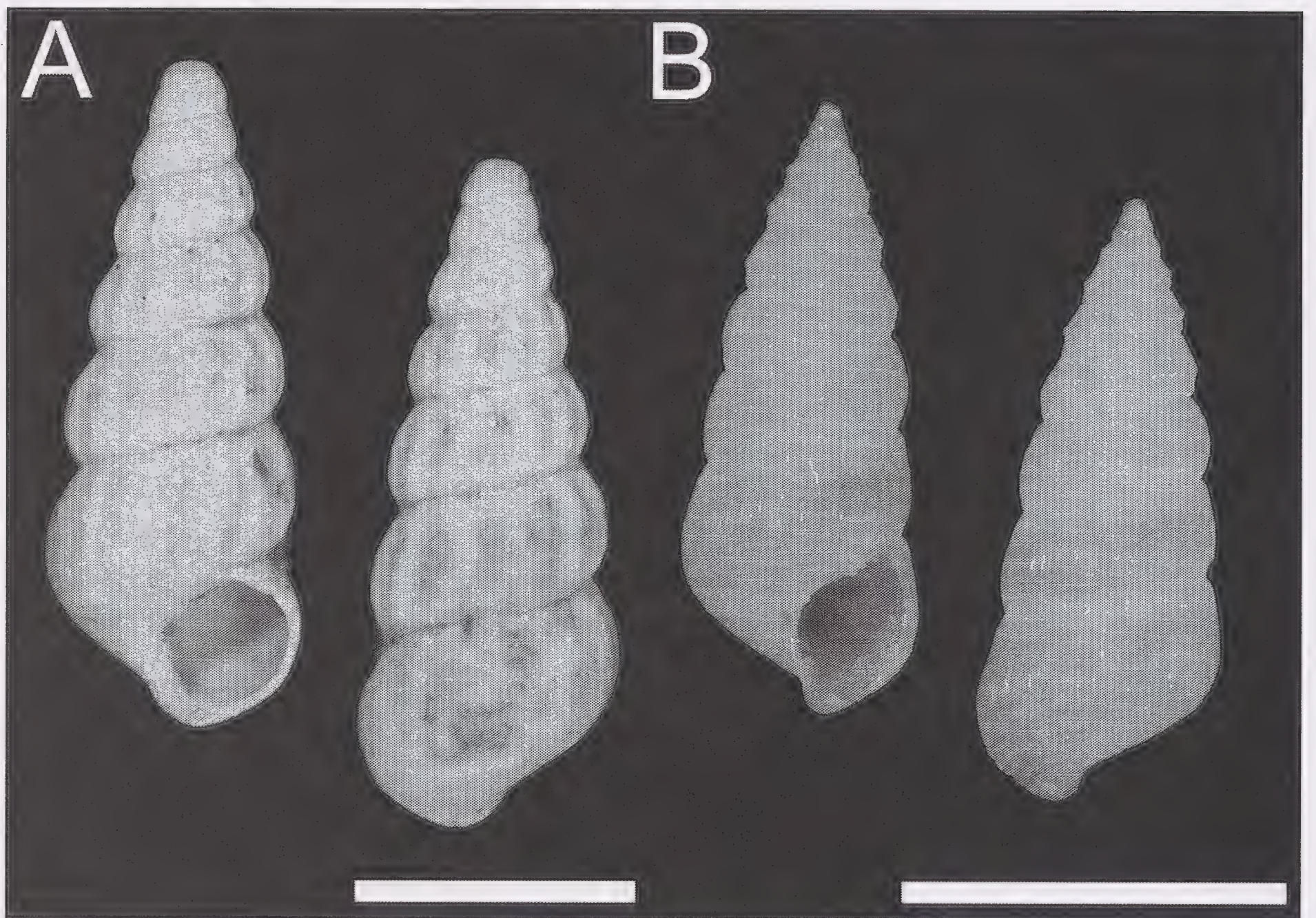


Fig. 1. A. *Bittium californicum* Dall & Bartsch, 1901. Figured holotype. USNM 162548. Dead Man's Island, San Pedro, California; B. *Alaba cerithidioides* Dall, 1889. Syntype. USNM 92725. U.S. Fisheries Commission. R/V Albatross, Stn 2619. North Carolina, S.E. from Cape Fear.

Bouchet, *in* Bouchet & Rocroi, 2005) and by Bandel (2006, as a subfamily of BITTIIDAE). Ponder & Warén did not state which species they considered the type of *Alabina*, but Bandel explicitly referred to '*Alabina cerithioides* [sic] (= *Finella dubia*)'. When *Alaba cerithidioides* is regarded as the type species of *Alabina*, ALABININAE is a junior subjective synonym of SCALIOLIDAE and OBTORTIONIDAE, and thus unlikely ever to be used; when *Bittium californicum* is regarded as the type species of *Alabina*, ALABININAE is a junior subjective synonym of BITTIINAE and also unlikely ever to be used.

8. However, clarity and unambiguity are at stake at the genus level, because *Alaba cerithidioides* Dall, 1889, and *Bittium californicum* Dall & Bartsch, 1901, are not congeneric and not even confamilial. There can be no doubt that Dall's original intention had been to establish *Elachista*, and thus *Alabina*, with *Alaba cerithidioides* Dall, 1889, as type species. However, the earlier and certainly unforeseen, publication of the description of *Bittium (Elachista) californicum* Dall & Bartsch, 1901, formally made *Bittium californicum* the type species of *Elachista* by monotypy, and has been overlooked by most authors. Other than Houbbrick (1993), who accepted *Bittium californicum* as the type species of *Elachista* and *Alabina* (and thus *Elassum* as an objective synonym), all 20th century authors, including Dall himself, have treated *Alaba cerithidioides* as the type species of *Alabina*. This includes the influential textbooks by Thiele (1929, p. 211) and Wenz (1940, p. 751). The fixation of *Alaba cerithidioides* as the type species of *Alabina* would leave *Elassum* as a potentially valid name for East Pacific species. The alternative (accepting the inadvertent fixation of

Bittium californicum as type species of *Alabina*) would perpetuate the use of a name with its historical burden of confusion: most species currently accepted as valid in *Alabina* are in fact neither congeneric nor confamilial with *Bittium californicum*, and would not remain classified in *Alabina* regardless. Because the case can be solved only by a Commission's ruling under the plenary power, it is brought to the Commission under Articles 65.2.2 and 70.2.

9. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all fixations of type species for *Alabina* Dall, 1902 prior to designation of *Alaba cerithidioides* Dall, 1889 by Dall (1902);
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Alabina* Dall, 1902 (gender: feminine), type species *Alaba cerithidioides* Dall, 1889, as ruled in (1) above;
 - (b) *Elassum* Woodring, 1946 (gender: neuter), type species *Bittium californicum* Dall & Bartsch, 1901 by original designation;
- (3) to place on the Official List of Specific Names in Zoology the name *Alaba cerithidioides* Dall, 1889, type species of *Alabina* Dall, 1902;
- (4) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the name *Elachista* Dall & Simpson, 1901, which is permanently invalid as a junior homonym of *Elachista* Treitschke, 1833.

Acknowledgements

We thank Gary Rosenberg for reading and commenting on an earlier version of the manuscript.

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Acknowledgement of receipt of this application was published in BZN 72: 108.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3687

***Phrynus mexicanus* Poinar & Brown, 2004 (Arachnida, Amblypygi, PHRYNIDAE): proposed conservation of the specific name as a junior primary homonym of *Phrynus mexicanus* Bilimek, 1867**

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Abstract. The purpose of this application, under Article 23.9.5 of the Code, is to conserve the specific name *Phrynus mexicanus* Poinar & Brown, 2004 which was proposed for a fossil whip spider (Arachnida, Amblypygi, PHRYNIDAE) preserved in Chiapas (Mexican) amber. This fossil species was initially described under the grammatically erroneous combination *Phrynus mexicana*. However, correcting the species epithet to *mexicanus* renders it a junior primary homonym of a Recent Mexican whip spider, *Phrynus mexicanus* Bilimek, 1867. The Recent species was subsequently transferred to the genus *Paraphrynus* Moreno, 1940, to give the current combination *Paraphrynus mexicanus* (Bilimek, 1867), and neither species has ever been considered congeneric with the other.

Keywords. Nomenclature; taxonomy; Amblypygi; PHRYNIDAE; *Phrynus*; *Paraphrynus*; *Phrynus mexicanus*; whip spider; Mexico; Chiapas amber; Miocene.

1. Dominik Bilimek was a priest and professor of natural history at the Austrian imperial military academy. He travelled with Archduke Maximilian to Mexico in 1865, remaining in his service after Maximilian was crowned Emperor of Mexico until the latter's death in 1867, after which Bilimek returned to Vienna with his collections of Mexican zoological and botanical material. Among other studies, Bilimek described a Recent species of whip spider (Arachnida, Amblypygi, PHRYNIDAE) from the Cacahuamilpa cave in the State of Guerrero, Mexico as *Phrynus mexicanus* Bilimek, 1867.

2. The arachnologist Reginald Pocock created a new genus of Neotropical whip spider which he named *Hemiphrynus* Pocock, 1902. This was later recognised as a

homonym of the beetle genus *Hemiphrynus* Horn, 1889 (Insecta, Coleoptera), and Abelardo Moreno Bonilla proposed a replacement name, *Paraphrynus* Moreno, 1940, for the preoccupied whip spider genus (Moreno, 1940). In a revision of *Paraphrynus*, Mullinex (1975) transferred Bilimek's species to Moreno's genus, forming the new combination as *Paraphrynus mexicanus* (Bilimek, 1867). This combination has been adopted in all subsequent taxonomic works – see e.g. the catalogue of Harvey (2003); and references therein – and is the current name for this species, which occurs only in southern Mexico (Armas, 2012)

3. Poinar & Brown (2004) described a fossil whip spider from the Miocene Chiapas (Mexican) amber as *Phrynus mexicana* Poinar & Brown, 2004. In a review of fossil and living Mexican whip spiders, Armas (2006, p. 356) pointed out that according to Article 31.2 of the Code the correct orthography for this name should have been *Phrynus mexicanus* Poinar & Brown, 2004, such that the species-group name matches the gender of the genus. The name *mexicana* is taken to be an adjective and is not regarded as a noun in apposition meaning [characteristic] Mexican objects. This rendered Poinar & Brown's name a junior primary homonym of *Phrynus mexicanus* Bilimek, 1867. Both names are in use. The fossil and Recent species have not been considered congeneric after 1899, and there is no junior synonym of *P. mexicanus* that could be used in its place. Thus following Article 23.9.5 of the Code we refrain from replacing the junior homonym and request a ruling from the Commission on this issue.

4. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the name *mexicanus* Poinar & Brown, 2004, as published in the binomen *Phrynus mexicana*, is not invalid by reason of being a junior primary homonym of *mexicanus* Bilimek, 1867, as published in the binomen *Phrynus mexicanus*;
- (2) to place on the Official List of Specific Names in Zoology the name *mexicanus* Poinar & Brown, 2004, as published in the binomen *Phrynus mexicana*, with the endorsement that it shall not be invalid by reason of being a junior primary homonym of *mexicanus* Bilimek, 1867, as published in the binomen *Phrynus mexicanus*.

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Acknowledgement of receipt of this application was published in BZN 72: 107.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3693

***Cryptodacus* Hendel, 1914 (Insecta: Diptera: TEPHRITIDAE): proposed suppression of *Cryptodacus* Gundlach, 1862 (Reptilia, Serpentes, COLUBRIDAE)**

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Abstract. The purpose of this application, under Article 23.9.3, is to conserve current usage of the well-established genus-group name *Cryptodacus* Hendel, 1914 for a genus of Neotropical fruit flies by suppression of the earlier, unused name *Cryptodacus* Gundlach, 1862, currently a junior synonym of *Arrhyton* Günther, 1858, a genus of snakes, under the plenary power of the Commission, in the interest of nomenclatural stability. *Cryptodacus* Gundlach has not been used as a valid name since 1883, whereas *Cryptodacus* Hendel has been used in a significant body of literature relating to fruit fly systematics, morphology and phylogeny and is the currently used name in various name and molecular databases.

Keywords. Nomenclature; taxonomy; Insecta; Diptera; TEPHRITIDAE; *Cryptodacus*; *Cryptodacus obliquus*; Reptilia; Serpentes; Neotropical fruit flies; snakes.

1. *Cryptodacus* Gundlach, 1862 (p. 1002) was proposed as a genus of snakes (Reptilia, Serpentes) with *C. vittatus* Gundlach (currently *Arrhyton vittatum* (Gundlach) as type species by monotypy. It was last used as a valid name by Bocourt (1883) and has been considered a junior subjective synonym of *Arrhyton* Günther, 1858 (type species *A. taeniatum* Günther) since Boulenger (1894, p. 251) in his *Catalogue of the Snakes in the British Museum* listed it in the synonymy of *Arrhyton*, where it has remained (Wallach et al., 2014). *Arrhyton* is the only genus in the subtribe ARRHYTONINA Hedges & Vidal (Tribe ALSOPHIINI), and is a well-defined monophyletic group of eight species restricted to Cuba. It belongs to a group whose relationships have been analyzed recently (Hedges & Garrido, 1992; Hedges et al., 2009).

2. *Cryptodacus* Hendel, 1914 (p. 84) was proposed as a genus of fruit flies (Insecta, Diptera, TEPHRITIDAE) with *C. obliquus* Hendel as type species by original designation. It is preoccupied by *Cryptodacus* Gundlach, 1861.

3. *Lezca* Foote, 1978 (p. 27), proposed with *L. tau* Foote as type species by original designation, is a junior subjective synonym of *Cryptodacus* Hendel (Norrbom, 1994).

4. Koçak in Koçak & Kemal (2009, p. 11) proposed *Muhabbetiella* as a replacement name for *Cryptodacus* Hendel, 1914, although this was unnecessary because *Lezca* Foote would be the valid name if *Cryptodacus* Hendel is not considered valid (Article 23.3.5 of the Code).

5. *Cryptodacus* Hendel currently includes 10 valid species occurring from Mexico to Bolivia and southern Brazil (Norrbon, 1994, 2004; Norrbom & Korytkowski, 2008): *Cryptodacus lopezi* Norrbom, 1994 (p. 40), from Guatemala; *C. obliquus* Hendel, 1914 (p. 84) from Panama, Peru and Bolivia; *C. ornatus* Norrbom, 1994 (p. 41) from Colombia, Ecuador and Brazil (Amazonas); *C. parkeri* Norrbom, 1994 (p. 43) from Costa Rica; *C. quirozi* Norrbom, 1994 (p. 44) from Mexico (Veracruz); *C. silvai* Lima, 1947 (p. 153) from Brazil (Rio Grande do Sul); *C. tau* (Foote, 1978, p. 27) from Mexico, Guatemala, Costa Rica and Panama; *C. tigreroi* Norrbom, 1994 (p. 46) from Ecuador; *C. trinotatus* Norrbom & Korytkowski, 2008 (p. 32) from Panama; and *C. univittatus* Norrbom & Korytkowski, 2008 (p. 36) from Panama.

6. *Cryptodacus* Hendel has been the accepted name for a genus of fruit flies for more than 100 years. It is the accepted name in the latest generic revision and species descriptions (Norrbon, 1994; Norrbom & Korytkowski, 2008), in phylogenetic studies of the genus (Norrbon, 1994) and various higher taxa within the economically important family TEPHRITIDAE (Norrbon, 1990, 1997; McPherson & Han, 1997; Han & McPherson, 1999; Smith & Bush, 1999; Han & Ro, 2009), in regional generic keys and manuals (e.g. Foote, 1980; Norrbom, 2010) that are the primary references for the identification of fruit flies in the Neotropical Region, in regional catalogs (Aczél, 1950; Foote, 1967), and in the worldwide catalog and database of Norrbom et al. (1999) and Norrbom (2004), which provided a comprehensive listing of the fruit flies (Insecta, Diptera, TEPHRITIDAE) as part of the Biosystematic Database of World Diptera (now Systema Dipterorum [Pape & Thompson, 2013]). This work compiled all available names of TEPHRITIDAE to provide a complete baseline of existing knowledge and to promote nomenclatural stability. In addition to publications, *Cryptodacus* Hendel is the accepted name in the following critical scientific databases and data infrastructures: Systema Dipterorum (<http://www.diptera.org>), the preeminent database for fly names; The Integrated Taxonomic Information System (ITIS; <http://www.itis.gov/>); BOLD (DNA barcoding database; <http://www.barcodinglife.com>), which includes 3 species of *Cryptodacus*; and Encyclopedia of Life (EOL; <http://eol.org/>). Identified specimens are present in at least 15 Museum and University collections.

7. Adoption of *Lezca* as the valid name in place of *Cryptodacus* Hendel would cause considerable nomenclatural confusion in the TEPHRITIDAE because *Cryptodacus* is the name used overwhelmingly for this taxon in the literature (see above), including the primary reference for the identification of fruit flies in the Neotropical Region (Norrbon, 2010), in online databases, and in entomological collections. Transfer of the species to *Lezca* would result in ten new or in one case restored combinations, this in addition to the ten unnecessary new combinations in *Muhabbetiella* proposed by Koçak & Kemal (2009). This further confusion could be avoided by the suppression of *Cryptodacus* Gundlach, 1862. Because the latter name is a junior synonym and has not been used as a valid name in over 130 years, this action would have minimal effect on the nomenclature of Serpentes, whereas it would promote stability of nomenclature within TEPHRITIDAE. Only one of the requirements for reversal of precedence (Article 23.9) is met by this case. *Cryptodacus* Gundlach has not been used as a valid name since 1899, fulfilling the first requirement (Article 23.9.1.1). Although *Cryptodacus* Hendel has been used as a valid name by more than 10 authors in at least 26 publications (a submitted list of usage of the name *Cryptodacus* Hendel, 1914 is kept

by the Commission Secretariat), it has been used in 22 publications in the last 50 years (since 1965), and thus the second requirement (Article 23.9.1.2) is not fulfilled.

8. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress the generic name *Cryptodacus* Gundlach, 1862; for the purposes of both the Principle of Priority and the Principle of Homonymy;
- (2) to place on the Official List of Generic Names in Zoology the name *Cryptodacus* Hendel, 1914 (gender: masculine), type species by original designation *Cryptodacus obliquus* Hendel, 1914;
- (3) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the name *Cryptodacus* Gundlach, 1862, as suppressed in (1) above.

Acknowledgments

We sincerely thank Neal Evenhuis and Thomas Pape for their comments on previous drafts of the manuscript. USDA is an equal opportunity provider and employer.

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Acknowledgement of receipt of this application was published in BZN 72: 179.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3682

The work 'The White-cheeked Geese: *Branta canadensis*, *B. maxima*, *B. 'lawrensis'*, *B. hutchinsii*, *B. leucopareia*, and *B. minima*.

Taxonomy, ecophysiographic relationships, biogeography, and evolutionary considerations, Volume 1, Eastern taxa; Volume 2, Western taxa, biogeography, and evolutionary considerations' by Harold C. Hanson: proposed suppression for nomenclatural purposes

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Abstract. The purpose of this application under Articles 78.1 and 81.1 of the Code is to suppress for nomenclatural purposes the two-volume work 'The White-cheeked geese: *Branta canadensis*, *B. maxima*, *B. 'lawrensis'*, *B. hutchinsii*, *B. leucopareia*, and *B. minima*. Taxonomy, ecophysiographic relationships, biogeography, and evolutionary considerations,' by Harold C. Hanson. Reasons for suppression are the work's many confounded new taxon designations, inappropriately chosen types, inadequately diagnosed new taxa, variable and confused authorships, and a flawed neotype designation. Together they serve as evidence of general nomenclatural dysfunction. If not suppressed, Hanson's work will become a source of destabilisation the nomenclature of the *Branta canadensis* complex.

Keywords. Nomenclature; taxonomy; Aves; Anseriformes; ANATIDAE; White-cheeked Goose; Canada Goose; *Branta canadensis*; Tundra Goose; *Branta hutchinsii*.

1. The *Branta canadensis* (Linnaeus, 1758) species-group is a widespread and well-known complex of large North American geese, commonly known collectively as the White-cheeked or Canada Goose (Delacour, 1954, p. 150; Johnsgard, 1978, p. 76; Carboneras, 1992, pp. 583–584; Kear, 2005, p. 306). It has invaded urban areas in parts of the United States and has been introduced successfully to northwestern Europe and New Zealand (Long, 1981, p. 44). Originally named by Linnaeus (1758,

p. 123), the complex was long considered to comprise one variable species with *canadensis* 8–12 subspecies (Delacour, 1954, pp. 154–156; Palmer, 1976, pp. 183–234; Johnsgard, 1979, pp. 441–444; Bellrose, 1980, pp. 141–164; Carboneras, 1992, pp. 583–584; Mowbray et al., 2002, pp. 5–9; Boyd & Dickson in Kear, 2005, p. 306). In 2004, the Committee on Classification and Nomenclature of the American Ornithologists' Union (Banks et al., 2004) divided the complex into two species by separating the form *hutchinsii* Richardson, 1832 (Tundra Goose) from *canadensis* on the basis of DNA sequence and other evidence; all remaining then-accepted taxa were treated as subspecies in either *canadensis* or *hutchinsii* without further splitting. This lead has since been followed in the influential Howard & Moore *Complete checklist of the birds of the world* (Dickinson & Remsen, 2013, pp. 9–10) and Baldassarre's (2014, pp. 221–262) up-to-date review of North American waterfowl, wherein the indicated consensus is that (1) *B. hutchinsii* breeds from west and north Alaska to central north Canada, and migrates to winter from the west and southwest U.S.A. to Mexico and Texas, and (2) *B. canadensis* breeds from south Alaska and west Canada to central east and southeast Canada and northeast U.S.A., most populations migrating to winter across the U.S.A. to north Mexico.

2. In 2006 and 2007, the late Harold C. Hanson authored two, annually successive volumes of a monograph of the *Branta canadensis* complex, which he split into six species and 218 subspecies (Hanson, 2006, 2007). Bertin W. Anderson was his editor and publisher and the co-author of four chapters in Volume 2 (Hanson, 2007). One species was proposed as new (*lawrensis* Hanson, 2007, p. 195), and 207 new subspecies were described or indicated as well. This astonishing splitting of infra-specific taxa has no parallel in the Aves. No other species complex today is recognised with more than a quarter of this number of subspecies, and the one or two that approach this level are widespread across several continents and archipelagos (Dickinson & Remsen, 2013; Dickinson & Christidis, 2014). There are, furthermore, serious irregularities and faults in the work's application of the nomenclatural rules in the current edition of the Code; the cataloguing of these deficiencies is the focus of this application. Detailed below, the anomalies and shortcomings in paragraphs 3–6 pervade the work while those in paragraphs 7–9 are more limited but still serious.

3. Of the 207 new nominal subspecies introduced in Hanson's (2006, 2007) two volumes, 45 are not explicitly annotated as intentionally new; thus their names are unavailable under Article, 16.1 of the Code. These nominal taxa are formally named, described and assigned types, but their names are placed in quotation marks at the place of original description. The reason for the quotation marks, explained in the Editor's Note on p. ix of Volume, 1, was to identify prospective new taxa that were so far known from only one or two specimens from wintering quarters. Thus it might be argued that such names were not even used as valid when proposed (Article, 11.5 of the Code). Yet the names are also sprinkled throughout the two volumes of text in descriptive comparisons of subspecies, and there the quotation marks are often omitted, thereby tending to mislead and confuse the reader. The availability of the new nominal species *lawrensis* proposed by Hanson (2007, p. 195), and a further four new nominal subspecies – *B. hutchinsii sverdrupi* (p. 13), *B. hutchinsii gabrielsoni* (p. 280), *B. hutchinsii eielsoni* (p. 296) and *B. canadensis montanensis* (p. 324) – are also compromised. Although described in a way that appears to make them available, viz., with designated types and annotated respectively as 'new species' and 'new

subspecies', these names are placed in quotation marks at the place of original description, thereby evidently once again running afoul of Article, 11.5. Bahr in Dickinson & Remsen (2013, pp. 394–397) did not accept them as available names.

4. A majority (113) of the holotypes for the 158 nominal subspecies available published as new cannot be assigned reliably to regional populations, leaving the application of the names they carry in limbo. This is because they are selected from locations outside breeding zones, at wintering and stop-over grounds and along migratory flyways where different breeding populations from across cool temperate to Arctic North America congregate and mingle. Many come from the same type locality: 19 from Pierre in South Dakota, 10 from Cudworth in Saskatchewan and another 10 from Cibola National Wildlife Refuge on the Arizona-California border. In almost all cases, the various breeding populations to which the types belong are unknown, or ill-defined and unclear. Identifying the types with those populations is, as explained in paragraph 5, an impossible task using morphological methods and the inadequate diagnoses supplied by Hanson and his editor-publisher, Bertin W. Anderson. Even tracing by DNA technology in the future would be time-consuming because of the need to sample all local breeding populations across the north of North America for comparison against types.

5. Although all new taxa are formally described, the descriptions themselves are generalised, diagnostically deficient and rarely state unambiguously 'characters that are purported to differentiate the taxon' as required by Article, 13.1.1 of the Code. There is no formal key to the taxa, nor are descriptive details presented in a comparative manner that identifies and contrasts differentiating traits among taxa. Such comparative details are crucial for taxon identification in the *canadensis* complex because differences in body tones and barring, neck pattern and gross size, which are the primary traits used for diagnosis by Hanson (2006, 2007), are so slight and nuanced among so many taxa and so varied among individuals due to wear, age, sex and even individuality (Delacour, 1954, pp. 150–78) as to require much more precise delineation than he provides. Size, for example, varies not only between regional populations but also between the sexes, such that opposite sexes often overlap in different regional populations. Yet Hanson's diagnoses of new taxa, which use size as a primary marker for many subspecies, give users no chance of applying it because his morphometric formulae often fail to identify sexes, including those of holotypes. That this has serious nomenclatural implications becomes clear when it is realised that most types come from mixed migratory populations of no known regional breeding source, as explained in paragraph 4 above. As a consequence, it is impossible to assign to regional breeding populations any of the names borne by these types with any consistency or reliability, let alone confidence.

6. Specification of type specimens and their institution of deposition is shambolic. All of the 207 new subspecies described or indicated in the two Hanson volumes are designated with holotypes. Nine are cited as held in recognised United States institutional museums, and so are secure. Two more, of *Branta canadensis pondi* Hanson, 2007 (p. 234) and *B. canadensis dawsoni* Hanson, 2007 (p. 243), are recorded as deposited in the private collection of Hanson's editor, Bertin W. Anderson, and so of unsure security. All holotypes of the remaining 196 new subspecific names were originally held in the collection of the Illinois Natural History Survey (INHS) at Champaign, Illinois, where Hanson worked. Then, on 31 October, 2006, they were

formally donated to the Field Museum of Natural History, Chicago, for safe-keeping, along with the rest of the INHS collection of the White-cheeked Goose complex (Hanson, 2007, p. vi, Editor's Comment). The Field Museum, however, has records of only 166 type-labelled specimens coming to it (D. Willard, pers. comm.), leaving the whereabouts of the remaining 30 unestablished. Three of the 166 specimens are of unpublished taxa, and eight more apply to just four names, indicating double-labelling. In another ten, the information on the type label conflicts in one way or another with information in the published citation, either in INHS number, locality, date or sex. Such ambiguities place questions over the identity of either type specimen or type locality or both. As for the 30 untraced holotypes, most if not all may be included, unannotated, among the *c.* 1500 other specimens of the White-cheeked Goose complex that also came to the Field Museum from the INHS in late 2006. Tracking them will be difficult, even impossible, because, judging from the nature of the errors uncovered above, discrepancies between data on specimens and published type citations are likely to be common.

7. As was noted in paragraph 1, *Branta hutchinsii* is the one species in the *canadensis* complex that convention as well as Hanson separate from *B. canadensis*. Its type material, however, is lost (Hellmayr & Conover, 1948, p. 306). Because Hanson (2006, 2007) recognised so many subspecies in *hutchinsii* (71 newly and availably described), he designated a neotype to fix the nominotypical form nomenclaturally. He (Hanson, 2007, p. 9) nevertheless did so in a way that is unacceptable under Article 75.3 of the Code. The designation does not meet the requirements of:

- (1) Article 75.3.2 because, although it describes the species generally and refers to the non-comparative original description, it specifies none of the traits that differentiate *hutchinsii* from *canadensis* or other presumptive species taxa in the complex.
- (2) Article 75.3.5, which is not addressed; and
- (3) Article 75.3.6 because the neotype is from Squaw Creek National Wildlife Refuge, Missouri, central U.S.A., in the wintering range for many populations of the complex and far from the original type locality of *hutchinsii*, at its breeding grounds on Melville Peninsula in the Canadian Arctic. This creates strong doubt that the neotype is from the original population, and raises the possibility, indeed likelihood, that it is of a different taxon, so altering the taxonomic application of the name (see paragraph 4 above).

8. Three nominal taxa proposed as new in Hanson (2007), with the annotation 'new species' or 'new subspecies' against them, are based by direct or indirect reference on earlier names published availably by earlier authors. They are, in Hanson's own conflicted format between our quotation marks:

- (i) '*Branta hutchinsii hutchinsii* (Richardson) 1832 new subspecies', on p. 9. *Anser hutchinsii* Richardson, with original place of publication, is cited as the only name in its synonymy. It leads us to presume that the annotation 'new subspecies' is either a simple editorial error or reflects a misapprehension that the designation of a neotype for *hutchinsii* (see paragraph 7 above) required Hanson to rename it as well;
- (ii) '*Branta hutchinsii barnstoni* new subspecies', on p. 127. This name was published without any attributive reference, but its cited holotype, USNM

20116 in the National Museum of Natural History, Smithsonian Institution, Washington, DC, is also the holotype of *Bernicla barnstonii* Ross, 1862 (see Deignan, 1961). The name *barnstoni* Hanson, 2007 is thus a junior primary homonym (Article 58.14 of the Code) and junior objective synonym of *barnstonii* Ross, 1862; and

- (iii) '*Branta maxima* (Delacour) new species', on p. 156. Faulty indication of this nominal species as new parallels that for the subspecies '*Branta hutchinsii hutchinsii* (Richardson) 1832 new subspecies' in (i) above. Furthermore, Hanson (2007, p. 158) subsequently referred its nominate subspecies to Delacour alone, but in the form *Branta maxima maxima* (Delacour). Given that Delacour (1951, p. 5) originally published *maxima* in the combination *Branta canadensis maxima*, Hanson here, as well as in other cases, confounded the use of parentheses around authors names (Article 51.3 of the Code).

9. Authorship of names is attributed inconsistently. Both volumes of Hanson's work cite him alone as author on their title pages, and all chapters in both works lack any further indication of authorship except four in volume 2 (Hanson, 2007). Those four chapters are headed with Hanson and his editor, Bertin W. Anderson, as co-authors. No author is given against the new subspecies names introduced in volume 1, and which are thus attributable unambiguously to Hanson as the stated author of the Volume. In volume 2, however, joint authorship by Hanson & Anderson is inserted erratically. It is cited against 17 of 77 names introduced in the unauthored chapters, implying that the remaining 60 names are attributable to Hanson alone as stated author of the volume. But in the four co-authored chapters, joint authorship is cited explicitly for only 35 of the 54 names, leaving the remaining 19 names in limbo. Are they also to be attributed jointly to Hanson & Anderson, in accord with chapter authorship? Or are they to be attributed to Hanson alone, in accord with the format in the non-jointly authored chapters of volume 2 and the interpretation of Bahr in Dickinson & Remsen (2013, pp. 394–397)?

10. Although significant in themselves, some of the nomenclatural flaws and irregularities in Hanson's (2006, 2007) monograph appear relatively trivial in such a large work. Others, however, have much greater effect, such as inadequate descriptions and ill-chosen types of often uncertain identity which in concert confound the application of names. When both minor and major problems are added together, they reveal a nomenclature that is consistently confused and dysfunctional, and collectively unsound. How else is a work to be judged when 55 of its names for newly proposed taxa – more than a quarter – are unavailable or otherwise invalid for one reason or another? Its geographic selection of type specimens, furthermore, is unworkable in ornithology. So far, no mainstream checklist, handbook or waterfowl management manual has adopted the Hanson nomenclature or any of its new taxa. Baldassarre (2014) expressly avoided it in his review of North American waterfowl. In their respected global checklist, Dickinson & Remsen (2013) listed Hanson's new taxa in an Appendix but adopted none, awaiting instead an assessment by the Committee on Classification and Nomenclature of the American Ornithologists' Union. That committee has since unanimously endorsed the application here to suppress Hanson's (2006, 2007) works for nomenclatural purposes (see paragraph 11). In the electronic media, the two primary global checklists of birds (Clements et al., 2014; Gill & Donsker, 2015) have also shunned Hanson's nomenclature so far.

We know, in fact, of only one work that has actually adopted it: a companion volume by his editor Bertin W. Anderson (2010), published to support Hanson's systematics (Banks, 2011). Fortunately, none of Hanson's names are published there in a way, with type designations and annotations of 'new species/subspecies', that would make them available and require suppression of Anderson's work as well. Consequently, suppressing the Hanson monograph for nomenclatural purposes will have a far less adverse impact in zoology than allowing it to stand as source of uncertainty, confusion and instability for decades to come.

11. We appreciate that nomenclatural suppression of a large, 2-volume work devoted substantially to the publication of new taxa is not to be undertaken lightly. Thus the reviewing commissioner for this application drew our attention to two options. One was complete nomenclatural suppression as advocated here. The other was, after unavailable names were eliminated, a series of reviews of all other names with irregularities, such as those with conflicted or untraceable type specimens and of unclear authorship or which were nomina dubia owing to lack of breeding site data. Their status or form could then be resolved by rulings of the Commission. We have considered these options at length, and reached the conclusion that complete nomenclatural suppression is the simpler and better course for three reasons. First, complete suppression would remove not only faulty names but also a work of serious nomenclatural malpractice from zoological nomenclature. In addition to the shortcomings elaborated above, for example, Hanson never referred to the Code as his base for nomenclatural procedures and authored previously published taxa anew whenever he changed their rank, in quasi-imitation of the procedure for new combinations in botanical nomenclature (see paragraph 8); parentheses around authors names are not used correctly either. Secondly, the review-of-irregularities approach would involve much tedious and time-consuming work that could, when finally resolved, result in long lists of species group names being placed on – and encumbering – the Official List and Official Index. The number of names that could be added runs potentially to 207. Thirdly, we have canvassed the options widely in the ornithological community, particularly in the Working Group on Avian Nomenclature of the International Ornithologists' Union and the Committee on Classification and Nomenclature of the American Ornithologists' Union. Universal preference was expressed for complete nomenclatural suppression of Hanson's (2006, 2007) monograph.

12. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to suppress for nomenclatural purposes the work 'The White-cheeked Geese: *Branta canadensis*, *B. maxima*, *B. 'lawrensis'*, *B. hutchinsii*, *B. leucopareia*, and *B. minima*. Taxonomy, ecophysiographic relationships, biogeography, and evolutionary considerations, Volume 1, Eastern taxa (2006); Volume 2, Western taxa, biogeography, and evolutionary considerations (2007)' by Harold C. Hanson;
- (2) to place on the Official Index of Rejected and Invalid Works in Zoological Nomenclature the work 'The White-cheeked Geese: *Branta canadensis*, *B. maxima*, *B. 'lawrensis'*, *B. hutchinsii*, *B. leucopareia*, and *B. minima*. Taxonomy, ecophysiographic relationships, biogeography, and evolutionary considerations, Volume 1, Eastern taxa (2006); Volume 2, Western taxa,

biogeography, and evolutionary considerations (2007)' by Harold C. Hanson, as suppressed in (1) above.

This application has been reviewed and approved unanimously by both the Working Group on Avian Nomenclature of the International Ornithologists' Union and the Committee on Classification and Nomenclature of the American Ornithologists' Union.

Acknowledgements

We are grateful to Dr. David Willard (*clo Field Museum, Chicago*) for providing information on the collections of the White-cheeked Goose complex donated to the Field Museum of Natural History by the Illinois Natural History Survey.

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Acknowledgement of receipt of this application was published in BZN 72: 1.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Comments on *Tibicina* Amyot, 1847 and *Lyristes* Horváth, 1926 (Insecta, Hemiptera, Homoptera): proposed conservation by the suppression of *Tibicen* Berthold, 1827 [?Latreille, 1825], and concerning the type species of *Cicada* Linnaeus, 1758

(Case 239; see BZN 41: 163–184; 71: 103–131; 179–180)

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Relevance of new genera

A recent proposal by Boulard & Puissant (BZN 71: 119–131), resurrecting and modifying Case 239 (Melville & Sims, BZN 41: 163–184), proposes to suppress the cicada genus *Tibicen* Latreille, 1825 (and Berthold, 1827, its German translation) (Insecta, Hemiptera, CICADIDAE) in favour of *Lyristes* Horváth, 1926 on the grounds that the first name is invalid vernacular and the translation is a nomen nudum. *Tibicen* and *Lyristes* both potentially claim the type *Cicada plebeja* Scopoli, 1763. However, Sanborn (BZN 71: 108–118), supported by Marshall & Hill (BZN 71: 103–107) and Hamilton (BZN 71: 179–180), has argued that Latreille correctly established *Tibicen* with the type *plebejus* and that suppression of the name on the grounds proposed by Boulard & Puissant would unjustifiably imperil other well-established insect genera created by Latreille.

Sanborn also summarized the relative usage of *Tibicen* and *Lyristes* from 1984 (the year in which Case 239 was initiated) through 2010 and showed that *Tibicen* was more widely applied in all world regions during that period. However, Marshall & Hill (BZN 71, p. 105), while supporting the validity of *Tibicen* Latreille, 1825, noted that ongoing molecular and morphological analysis was expected to support new genera for many *Tibicen* species, which is significant because certain Eurasian cicadas have been more consistently referenced under *Lyristes*. This study was recently published (Hill et al., 2015), leading to most of the New World *Tibicen* taxa being moved to new genera (*Neotibicen* Hill & Moulds, *Hadoa* Moulds) or to *Diceroprocta* Stål, 1870. In another major development, *Auritibicen* Lee has been published for most Asian *Tibicen* species (Lee, 2015) – note that *Auritibicen* is synonymous with *Subsolanus* Moulds in Hill et al. (2015) and preceded it in publication by 11 days making *Auritibicen* the senior synonym. In addition, Sanborn (2014) has moved *Tibicen occidentis* (Walker, 1850) to a new genus and tribe, and Sanborn (2015) and Qi et al. (2015) have recently moved five additional *Tibicen* species to existing genera. Consequently, only six species out of 71 listed under *Tibicen* by Sanborn (2013) remain in the genus – *altaiensis* (Schmidt, 1932), *armeniacus* (Kolenati, 1857), *esfandiarii* Dlabola, 1970, *gemellus* (Boulard, 1988), *isodol* (Boulard, 1988) and *plebejus* (Scopoli, 1763). All are from Eurasia.

With only six Eurasian species remaining in *Tibicen*, the balance of the evidence with respect to nomenclatural stability has shifted, with *Lyristes* now preferred. Most (141) of the approximately 173 publications from 1984 to 2010 cited in the most recent catalogue involve the type species *plebejus*, and of those *Lyristes* is used 75% of the time and *Tibicen* 18%, with 63% of the unique senior authors using *Lyristes* and 25% using *Tibicen* (Sanborn 2013). *Lyristes* also predominates in post-1984

publications involving the other five species, with 92% of papers (22 of 24) and 75% of unique senior authors (six of eight). A recent check of Google Scholar (<http://scholar.google.com>) suggests that the preference for *Lyristes* has continued since 2011, with 30 publications referencing *Lyristes plebejus* or *plebeja* and seven referencing *Tibicen plebejus* or *plebeja*.

Because the usage of *Lyristes* predominates for the six species remaining in *Tibicen*, the Commission may have a third option for Case 239: to suppress its use in favour of *Lyristes* Horváth under Article 23.9.3 and the plenary power. This action would maximize nomenclatural stability for the remaining affected cicada species while protecting the validity of other insect genera named by Latreille (1825) and/or Berthold (1827). Whether the current preference for *Lyristes* is strong enough to justify suppressing the senior synonym may depend on the balance of factors in this complicated case.

Suppressing *Tibicen* for its remaining species would also assist with the problem concerning the type of *Cicada* Linnaeus, 1758, as discussed in the 2014 Comments, and it would remove the last remaining family-group taxon based on *Tibicen*, the tribe TIBICENINI Van Duzee, 1916, which has been confused with TIBICININI Distant, 1905 (also CICADIDAE) as a result of its similar spelling. While TIBICENINI remains in use, recent authors have more often used CRYPTOTYMPANINI Handlirsch, 1925, which will take precedence if *Tibicen* is suppressed (47 post-1984 publications with CRYPTOTYMPANINI, most applying the name for genera in addition to *Cryptotympana*, vs. 14 with TIBICENINI, from Google Scholar).

The International Commission on Zoological Nomenclature is accordingly asked to consider the following alternative option:

- (1) to use its plenary power to suppress *Tibicen* Latreille, 1825 (and/or Berthold, 1827) and any use of this name subsequent to that by Latreille (1825) for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (2) to place on the Official Index of Rejected and Invalid Names in Zoology the name *Tibicen* Latreille, 1825 (and/or Berthold, 1827) (type species *Cicada plebeja* Scopoli, 1763 by original designation and monotypy);
- (3) to use its specific powers to affirm *Cicada haematodes* Scopoli, 1763 as the type species of *Tibicina* Kolenati, 1857 by original designation;
- (4) to designate *Cicada orni* Linnaeus, 1758 as the type species of *Cicada* Linnaeus, 1758, by the plenary power if necessary.

Additional references

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Lyristes Horváth, 1926 was created to replace *Tibicen* Latreille, 1825, without being universally adopted, and was notably ignored by North-American workers. In order to resolve the inherent nomenclatural problem of *Tibicen* and *Lyristes*, Boulard & Puissant, Marshall & Hill, and Sanborn (BZN 71: 103–131 wrote to the ICZN about the validity of these genera. An application concerning their status was originally submitted to the Commission as Case 239.

While *Tibicen* has been used in North America, Eurasian and Asian species have been more commonly referred to *Lyristes* during the last three decades, notably in Central Europe, China, France, Germany, Greece, Italy, Japan, Korea, Portugal,

Spain and Turkey: see Boulard & Puissant (BZN 71: 119–131; 2015) for a review of the literature.

Recently, Lee (2008, 2015) followed the opinion of Boulard & Puissant and retained *Lyristes* over *Tibicen*, whereas Hill et al. (2015) used *Tibicen* while awaiting a decision by the Commission. Lee (2015) transferred 14 species from eastern Asia from *Lyristes* to a new genus, *Auritibicen*.

Hill et al. (2015) defined three new genera based on a phylogenetic analysis, two for North American and Central American taxa (*Neotibicen* Hill & Moulds and *Hadoa* Moulds) and one for Asian species (*Subsolanus* Moulds). On the one hand, thirty-five of the 38 North American species and subspecies formerly placed in *Tibicen* were transferred to two of these new genera: *Neotibicen* mainly for the eastern and central North American species and *Hadoa* mainly for a western North American clade. Furthermore, five Mexican species formerly placed in *Tibicen* were transferred to *Diceroprocta* Stål. *Subsolanus* Moulds, 2015 was proposed for 14 Asian species. However, *Subsolanus* Moulds, 2015 is a junior synonym of *Auritibicen* Lee, 2015 syn. nov.

Hamilton (BZN 71: 179–180) wrote that rejecting *Tibicen* in favour of *Lyristes* through an ICZN Opinion is not necessary because the suppression of the name *Tibicen* would upset a large number of well-established names in North America. This comment is now unfounded since all the American species formerly placed in the genus *Tibicen* have been transferred to two new genera or placed in *Diceroprocta* (see above).

Therefore, the only species now regarded as belonging to *Lyristes* / *Tibicen* are those from the western Mediterranean area to western Asia. As the genus name commonly used for taxa from this area is *Lyristes*, we ask the ICZN to retain *Lyristes* over *Tibicen* by agreeing to the proposals made by Boulard & Puissant (BZN 71: 119–131).

Additional references

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Comment on the proposed conservation of *Neobisium* Chamberlin, 1930, NEOBISIOIDEA Chamberlin, 1930, NEOBISIIDAE Chamberlin, 1930 and NEOBISIINAE Chamberlin, 1930 (Arachnida, Pseudoscorpiones, Chelonethi), by designation of *Obisium muscorum* Leach, 1817 as the type species of *Obisium* Leach, 1814 (Case 3616; see BZN 70: 75–81)

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Paragraph 2 in Judson's application takes for granted that *Obisium* Leach, 1814 (p. 429) is a newly proposed genus, independent from *Obisium* Illiger in Kugelann & Illiger, 1798. The former would be a homonym of the latter, and it was replaced with *Neobisium* Chamberlin, 1930 on this basis. This nomenclatural reasoning is in turn based on Judson's (2012) arguments, as exposed in para. 9 of his application.

However, this paragraph shows several flaws, since it does not explain the real situation in Leach's text. First, the only genus recognized is *Chelifer* Geoffroy, 1762. Among its synonyms, '*Obisium*, Illiger, Walckenaer' is mentioned. Leach included 3 species by name: *Chelifer cancroides* 'Latr.' (i.e. Linnaeus, 1758) (still in this genus), *C. cimicoides* (Fabricius, 1793) (now *Chernes cimicoides*) and *C. trombidiodos*, an incorrect subsequent spelling for *Chelifer trombidiodos* Latreille, 1804 (now *Chthonius trombidiodos*). The name '*Obisium trombidiodos*, Leach's MSS.' appears in the synonymy of the latter and is not used as a valid name.

From the above description, it is clear that such a thing as a new genus *Obisium* Leach does not exist. Thus, Sundevall (1833) and Harvey & Mahnert (2011), among others, were right in their treatments of *Obisium* sensu Leach as a later use of *Obisium* Illiger. The use of *Obisium* sensu Leach as a valid name by later authors is incorrect. Moreover, a genus cannot be considered as new every time a new species not matching the original concept is added to it. If the type species were subsequently excluded, a later use of this modified concept would be a misidentification, and in consequence, it would be unavailable. In this chain of errors, the replacement name *Neobisium* Chamberlin, 1930 fails as an unnecessary replacement name for *Obisium* Illiger, the only available name, and the family name NEOBISIIDAE Chamberlin, 1930 is also unnecessary.

Judson's application is thus based on an incorrect statement of availability for *Obisium* sensu Leach, which, being unavailable, cannot have a type species (*Chelifer trombidiodos* Latreille, 1804) and cannot be replaced with *Neobisium* Chamberlin, 1930. This would entail a large list of nomenclatural changes which are, as mentioned in the original application, 'highly disruptive and confusing' (see paras. 11 and 12). I am of the same opinion, and the best way to keep the current usage of *Neobisium* and NEOBISIIDAE is to make available *Obisium* sensu Leach.

The International Commission on Zoological Nomenclature is accordingly asked to consider the following alternative set of proposals:

- (1) to use its plenary power to declare *Obisium* Leach, 1814 an available name, not to be considered a later use of *Obisium* Illiger in Kugelann & Illiger, 1798;
- (2) to use its plenary power to set aside all fixations of type species for the nominal genus *Obisium* Leach, 1814 (as made available in (1) above) before the

designation of *Obisium muscorum* Leach, 1817 by Simon (1879) as the type species;

- (3) to emend the entry for *Neobisium* Chamberlin, 1930 in the Official List of Generic Names in Zoology to record that it was introduced as a replacement name for *Obisium* Leach, 1814 (due to homonymy with *Obisium* Illiger in Kugelann & Illiger, 1798) and that its type species is consequently *Obisium muscorum* Leach, 1817, as ruled in (2) above;
- (4) to place on the Official Index of Rejected and Invalid Generic Names in Zoology *Obisium* Leach, 1814 (a junior homonym of *Obisium* Illiger in Kugelann & Illiger, 1798), type species *Obisium muscorum* Leach, 1817, as ruled in (2) above;
- (5) to emend the entry on the Official List of Family-Group Names in Zoology for CHELIFERIDAE to record that its author is Risso [1827].

Comment on the proposed confirmation of the availability of the generic name *Spracklandus* Hoser, 2009 (Reptilia, Serpentes, ELAPIDAE) and for the nomenclatural validation of the journal in which it was published

(Case 3601; see BZN 70: 234–237; 71: 30–38, 133–135, 181–182, 252–253; 72: 61–78)

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In early 2009 Raymond Hoser provided a new generic name *Spracklandus* Hoser, 2009, for a component of what had been, until then, widely considered a single ‘catchall’ Cobra genus *Naja* Laurenti, 1768. Later in 2009, with full knowledge of Hoser’s prior naming of the group, V. Wallach, W. Wüster, and D.G. Broadley (Wallach et al., 2009) published an article in which they attempted to displace Hoser’s earlier name. This article incorrectly asserted that:

- (1) the Australasian Journal of Herpetology (*AJH*) was not formally ‘published’
- (2) it did not exist as a ‘print on paper’ publication;
- (3) it was not produced in multiple identical copies; and
- (4) it was not produced for permanent scientific record in accordance with the ICZN Code (4th Edition);

A forensic analysis was said to have been undertaken which supposedly invalidated Hoser (2009). Then Wallach et al. interpreted the Code rule on availability and its intent, presented factually incorrect information about the vehicle of publication (i.e. the *AJH*) and at the same time criticised Hoser for being ‘self-published’, and for his publications not being ‘peer-reviewed’. Wallach et al. (2009), by its content, is clearly not an objective paper and judging by the standard of evidence, personal attacks and errors it contains there is little evidence of peer review which, by the same argument, makes the coined name ‘*Afronaja*’ not worthy of recognition or use according to the authors’ own non-Code-compliant criteria. Consequently, their argument is unconvincing but at the same time has created the junior generic name *Afronaja* Wallach, Wüster & Broadley, 2009.

From my observations of the hard copies of *AJH* including Issue 7 and, irrespective of the contents, it is most definitely published and the standard of print

medium is equal to or better than most other similar journals currently available. *AJH* Issue 7 definitely does exist as a ‘print on paper’ publication in accordance with Article 8 of the Code irrespective of whether PDF electronic versions/replications and photocopies have also been circulated since. From my observations *AJH* Issue 7 was produced in multiple copies and I am personally aware of some of these held by friends and colleagues from the time of publication. It is evident that many had been sent out when published, thereby refuting the later allegation by Wallach et al. (2009) that copies had been circulated one at a time as a print on demand publication. The hard copy availability is further confirmed by the unsolicited copies that were sent and received by Museums, National and State Libraries and *Zoological Record*, at dates corresponding with the initial printing and publication in 2009.

The *AJH* also contains a statement in print that the articles therein are intended for permanent scientific record. On page 15 of *AJH* Issue 7, the following is written: ‘*Australasian Journal of Herpetology*. Publishes original research in printed form in relation to reptiles, other fauna and related matters, including the subjects of classification, ecology, legal, captivity, etc. in a peer reviewed printed journal for permanent public scientific record and with a sizeable print run has a global audience.’ Thus there can be no question that the relevant journal was published in accordance with the spirit and letter of the Code and so the creation of the replacement name *Afronaja* by Wallach et al. is totally unwarranted. Hoser (2013, 2015a-d) gives numerous examples of published statements by Wüster and others improperly telling people not to use nomenclature for valid taxa named by Hoser (e.g. Wüster et al., 2001). Hoser (2015a) provides a list of many valid taxa first named by Hoser and others for which Wüster, Kaiser and associates have improperly coined their own names. These actions have in fact created instability and are in contempt of the Code, as noted by Cogger (2014), and have been widely promoted by Hoser’s protagonists as a ‘nothing to lose’ position, in that if they did nothing, Hoser’s names would come into general usage, so by fighting they at least have a chance of preventing this. Hoser (2013, 2015a, 2015d) details a long running campaign by Wüster and associates to attack Hoser at all levels, including his business and other matters, indicating that the current actions against his nomenclature are motivated by personal reasons as opposed to any legitimate desire to protect the Code as claimed. This is perhaps best demonstrated by the overwriting in 2014 of long-established and widely used names such as *Broghammerus* Hoser, 2004 and *Leiopython hoserae* Hoser, 2000 with names coined by Wüster associates for the express purpose of gaining ‘name authority’ from Hoser in contempt of the Code and in defiance of their own limiting documents, Kaiser et al. (2013) and Rhodin et al. (2015), which specifically exclude those taxa from being renamed by them (Hoser, 2015d).

It was generally agreed by herpetologists across the globe that the Spitting Cobras (*Spracklandus* Hoser, 2009) should be separated as a distinct taxonomic group. One could easily argue that the ICZN need do nothing as it should be clear to any objective observer that Hoser’s name has priority and his publications, given the test of time, are likely to prevail. His name *Spracklandus* does apply to a natural assemblage and can be considered sound.

Hoser has been variously condemned for:

- not knowing what he is talking about (yet his taxa are worthy of being renamed by others; examples in Hoser 2013, 2015a, 2015d).

- the new species- and genus-group names he has chosen are unpalatable (one could list many other such names in current use, e.g. *Montypythonoides* Smith & Plane, 1985).
- naming new taxa with patronymic etymologies for people who Hoser chooses to recognise but who are considered inappropriate or not liked by others.
- Stealing the intended work of others – this is difficult to prove as it is virtually impossible to know who knew what first. Furthermore, Hoser has had over 30 years' experience with reptiles that I am aware of, particularly with snakes; he has developed husbandry techniques, has successfully bred many in captivity and has travelled widely experiencing many species in the wild in their natural habitats. To suggest he has no knowledge of the animals he has published about is a false assertion.
- Not being rigorous in his methods, thereby casting doubt on the validity of his taxonomic arrangements (given the test of time these arrangements will either be proved to be correct or they won't; this becomes a reputational problem for Hoser but for no one else).
- Publishing in the *AJH*, a journal he controls, even though many of Hoser's taxonomic articles have appeared in other journals not under his control as cited by Kaiser et al., (2013, but claimed otherwise by Kaiser, 2013). His critics have failed to acknowledge this. Almost without exception the articles condemning Hoser and that have proposed replacement names on invalid grounds have been produced in vehicles of publication that lack any effective peer-review or quality control as demonstrated in detail by Hoser (2015d). The authors of Rhodin et al. (2015), including Kaiser, have asserted that they represent the entire 'global herpetological community' in paragraph 1 (twice), as well as paragraphs 4, 5, 6 and 14. Nothing could be further from the truth. Kaiser (2013) proposed a 'taxon filter', a concept thoroughly discredited by any rational assessment. This proposal would open the way for the destabilisation of all zoological nomenclature. Kaiser's stance has already had such a destabilising effect, with overwriting of established names such as those of John Edward Gray, Richard Wells and others. The comments by Rhodin et al. (2015) in their summary seeking to suppress all names by Hoser, including quite evidently any he may publish in the future, are irrelevant to Case 3601 which should in any event only relate to *Spracklandus*.

A similar application was made to suppress the works of Wells and Wellington by another group of herpetologists, several being the same individuals who have co-signed Rhodin et al. (2015) [see list of names provided with Adams et al. (1988)]. In the *Bulletin of Zoological Nomenclature*, 1988, L.B. Holthuis of Rijksmuseum van Natuurlijke Historie, Leiden commented 'I see no reason whatever to suppress these works. Such a suppression by the Commission would be highly inadvisable, if not 'illegal', and would severely damage the image of the Commission as an impartial body.'

George Zug's comment in BZN 71(4) alleging that Hoser's articles do not meet the Articles of the ICZN Code is not correct. By any reasonable and objective interpretation of Article 8 and the intent and purpose of it, the *AJH* does conform to the definition of a publication and the new names are available, as outlined above. This is regardless of repeated baseless assertions by others. However distasteful

Hoser's name changes may be to some they have been published in accordance with the Code. Wulf Schleip's 'forensic' analysis of Hoser's journal articles in BZN 71 (3) and his assertion that his findings prove that the *AJH* does not conform to what constitutes a publication, is flawed and unconvincing and should be ignored by the Commission. What he did not disclose was the fact that he later renamed *Leiopython hoseae* Hoser, 2000 with his own coined name, *Leiopython meridionalis* (Schleip, 2014), citing Kaiser et al. (2013) as his justification, even though he himself co-signed that document and it specifically excluded this taxon from the renaming list.

Scott Thomson as corresponding author for Rhodin et al. (2015) argues that because he and some of his colleagues don't like Hoser they are refusing to use Hoser's names. In doing so they too cite Kaiser et al. (2013) of which they are all co-authors. Logic would suggest it is their actions, not Hoser's, that have primarily caused nomenclatural confusion by proposing names for taxa already properly named.

Thomson, Sprackland and Georges are all cosignatories of Rhodin et al. (2015). All have already acted in breach of the Code by renaming species previously named by others (besides Hoser) (Georges & Thomson 2010; Thomson, 2015, Thomson & Georges, 2009; Hoser, 2015a, 2015d). It is self-evident that they hope an invalidation of Hoser's publications, or at least *AJH* Issue 7, will bring about the suppression of the names they wish to replace (see Thomson & Georges, 2009; Georges & Thomson, 2010; Thomson, 2015). Thomson asserts that legal, conservation efforts and people's lives are at risk, but conservation and other agencies are not likely to be confused by application of inappropriate nomenclature unless perhaps advised by those with a vested interest.

Before Thomson lost his 'name authority' for the genus *Myuchelys* (Thomson & Georges, 2009), he was a staunch defender of the Code, expressing opposite views to those in his co-written document (Rhodin et al., 2015). As Thomson correctly stated (on internet chat forum 'kingsnake.com' 29 December 2003), 'Ignoring names that meet the requirements of the ICZN is not an option. This cannot be done under strict application of the rules as the names if valid are Available and must be used. The alternative is to refute them. So disagree with the names all you like, 'Refute or Accept'. That is, publish a valid refutation of the taxon to which the name applies. . . . Nomenclature is pretty black and white. There are a set of rules. Apply them, if the name is valid, use it, if not reject it. If you don't like it. . . . well I don't recall that being in the rules.'

The fundamental objective of the Code is to promote stability and universality; the intentional renaming of an entity, already validly named, is no way of achieving that. Abolition of the Principle of Priority is a recipe for disaster.

The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to confirm that the generic name *Spracklandus* Hoser, 2009 has been published in accordance with the Code and hence is available;
- (2) state that the Australasian Journal of Herpetology (issues 1–24) based on current printing/publication standards as evidenced by the copies they have seen or have in their possession, does constitute a legitimate publication in the sense of the Code.

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OPINION 2362 (Case 3620)***Ticinella primula* Luterbacher, 1963 (Foraminifera, Globigerinida, ROTALIPOROIDEA, ROTALIPORIDAE): specific name conserved**

Abstract. Under the plenary power the Commission has conserved the name *Ticinella primula* Luterbacher, 1963, which is in prevailing use for a species of Early Cretaceous (Albian) planktonic foraminifera of the superfamily ROTALIPOROIDEA Sigal, 1958 (nom. correct. ex ROTALIPORACEA) by suppressing its senior subjective synonym *Hedbergella yezoana* Takayanagi & Iwamoto, 1962.

Keywords. Nomenclature; taxonomy; Foraminifera; Globigerinida; ROTALIPOROIDEA; ROTALIPORIDAE; *Ticinella*; *Ticinella primula*; *Hedbergella yezoana*; planktonic foraminifera; Albian; Early Cretaceous.

Ruling

- (1) Under the plenary power the Commission has suppressed the specific name *yezoana* Takayanagi & Iwamoto, 1962, as published in the trinomen *Hedbergella trocoidea yezoana*, for the purposes of the Principle of Priority, but not for those of the Principle of Homonymy.
- (2) The specific name *primula* Luterbacher, 1963, as published in the binomen *Ticinella primula*, is hereby placed on the Official List of Specific Names in Zoology.
- (3) The specific name *yezoana* Takayanagi & Iwamoto, 1962, as published in the trinomen *Hedbergella trocoidea yezoana* and as suppressed in (1) above, is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology.

History of Case 3620

An application to conserve the specific name *Ticinella primula* Luterbacher, 1963 for a species of Early Cretaceous (Albian) planktonic foraminifera was received from Atsushi Ando (*Department of Paleobiology, National Museum of Natural History, Smithsonian Institution, Washington, D.C., U.S.A.*) on 13 February 2013. After correspondence the Case was published in BZN 70: 71–74 (June 2013). The title, abstract and keywords of the Case were published on the Commission's website. No comments were received on this Case. The Case was sent for vote on 1 December 2014 (VP 24). A greater than two-thirds majority of Commissioners voted FOR the Case (13 For, 4 Against).

Decision of the Commission

At the close of the voting period on 1 March 2015 the votes were as follows:

Affirmative votes – 13: Ballerio, Bouchet, Brothers, Grygier, Harvey, Krell, Pape, Patterson, Rosenberg, van Tol, Yanega, Zhang and Zhou.

Negative votes – 4: Alonso-Zarazaga, Halliday, Kojima and Štys.

Bogutskaya, Fautin, Kottelat, Kullander, Lamas, Ng, Pyle and Winston were on leave of absence.

Voting FOR, Grygier said that he would have preferred conditional reversal of precedence, which was mentioned at one point in the text, instead of the asked-for suppression. Voting AGAINST, Alonso-Zarazaga said that papers like this should be rewritten prior to publication in the BZN to request reversal of precedence instead of suppression. If in the future it is discovered that the two forms are different taxa, a new name would have to be proposed, since one available name would have been lost, adding to confusion. Also voting AGAINST, Halliday explained that he voted against this proposal, because it asked for the wrong solution to the problem. *Hedbergella yezoana* and *Ticinella primula* were subjective synonyms. Future research might show that they are actually different species. If the name *yezoana* were to be suppressed, that species would be left without a name. A better solution would be to grant *primula* precedence over *yezoana* whenever the two are considered to be synonyms, and not to completely suppress *yezoana*. Also voting AGAINST, Kojima said that the proposal was based on a taxonomic decision and thus conditional precedence of *Ticinella primula* Luterbacher, 1963 over *Hedbergella yezoana* Takayanagi & Iwamoto, 1962 would have been a better solution. Also voting AGAINST, Štys said that he failed to see why the junior synonym could not continue to be used as an indicative name in biochronology and biostratigraphy. Therefore, he preferred to follow the Principle of Priority.

Original references

The following are the original references to the names placed on either an Official List or Index by the ruling given in the present Opinion:

- primula*, *Hedbergella*, Luterbacher, 1963, *Eclogae Geologicae Helvetiae*, **56**: 1085–1086.
yezoana, *Hedbergella*, Takayanagi & Iwamoto, 1962, *Transactions and Proceedings of Palaeontological Society of Japan, New Series*, **45**: 191–192.

OPINION 2363 (Case 3609)***Bulimus cylindricus* Menke, 1828 (Gastropoda, Stylommatophora, ENIDAE): specific name conserved**

Abstract. The Commission has ruled under the plenary power that the specific name of the terrestrial snail *Bulimus cylindricus* Menke, 1828 (currently *Brephulopsis cylindrica*, ENIDAE) is available despite being originally published as a junior primary homonym of *Bulimus cylindricus* Gray, 1825 (currently classified in the genus *Macroceramus*, UROCOPTIDAE).

Keywords. Nomenclature; taxonomy; Gastropoda; Stylommatophora; ENIDAE, UROCOPTIDAE; *Bulimus*; *Brephulopsis*; *Macroceramus*; *Bulimus cylindricus*; *Brephulopsis cylindrica*; terrestrial snail; Caribbean; Europe.

Ruling

- (1) Under the plenary power the Commission has ruled that the name *cylindricus* Menke, 1828, as published in the binomen *Bulimus cylindricus*, is not invalid by reason of being a junior primary homonym of *cylindricus* Gray, 1825, as published in the binomen *Bulimus cylindricus*.
- (2) The name *cylindricus* Menke, 1828, as published in the binomen *Bulimus cylindricus*, is hereby placed on the Official List of Specific Names in Zoology with the endorsement that it is not invalid by reason of being a junior primary homonym of *cylindricus* Gray, 1825, as published in the binomen *Bulimus cylindricus*.

History of Case 3609

An application to conserve the specific name of the terrestrial snail *Bulimus cylindricus* Menke, 1828, originally published as a junior primary homonym of *Bulimus cylindricus* Gray, 1825 (currently classified in the genus *Macroceramus*, UROCOPTIDAE), was received from Igor Balashov (*Schmalhausen Institute of Zoology, National Academy of Sciences of Ukraine, Kiev, Ukraine*) and Francisco Welter-Schultes (*Zoological Institute of Göttingen University, Göttingen, Germany*) on 05 October 2012. After correspondence the Case was published in BZN 70: 9–11 (March 2013). The title, abstract and keywords of the Case were published on the Commission's website. No comments were received on this Case. The Case was sent for vote on 1 December 2014 (VP 26). A greater than two-thirds majority of Commissioners voted FOR the Case (16 For, 1 Against).

Decision of the Commission

At the close of the voting period on 1 March 2015 the votes were as follows:

Affirmative votes – 16: Alonso-Zarazaga, Ballerio, Bouchet, Brothers, Grygier, Halliday, Harvey, Krell, Pape, Patterson, Rosenberg, Štys, van Tol, Yanega, Zhang and Zhou.

Negative votes – 1: Kojima.

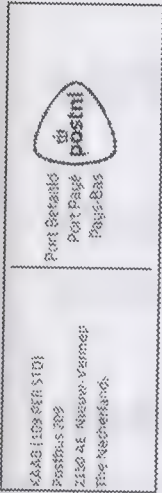
Bogutskaya, Fautin, Kottelat, Kullander, Lamas, Ng, Pyle and Winston were on leave of absence.

Voting AGAINST, Kojima said that the specific name *cylindricus* Menke, 1828 seemed to be used only among the biologists who would easily accept and cope with the change of the name of this European gastropod mollusc from *Brephulopsis cylindrica* (Menke, 1828) to *Brephulopsis fusiformis* (Menke, 1828) .

Original references

The following is the original reference to the name placed on the Official List by the ruling given in the present Opinion:

cylindricus, *Bulimus*, 1828, Menke, *Synopsis methodica molluscorum generum omnium et specierum earum, quae in museo Menkeano adservantur; cum synonymia critica et novarum specierum diagnosibus*. Gelpke, Pyrmonti, p. 77.



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Negative votes – none.
Bogutskaya, Fautin, Kottelat, Kullander, Lamas, Ng, Pyle and Winston were on leave of absence.

OPINION 2364 (Case 3610)***Phelister* Marseul, 1853 (Insecta, Coleoptera, HISTERIDAE): usage conserved**

Abstract. The Commission has conserved the current usage of the generic name *Phelister* Marseul, 1853 for a well-established genus of histerid beetle by setting aside all previous type fixations for *Phelister* Marseul, 1853 preceding that of *Phelister haemorrhous* Marseul, 1853 by Kryzhanovskij & Reichardt (1976).

Keywords. Nomenclature; taxonomy; Insecta; Coleoptera; HISTERIDAE; *Phelister*; *Baconia*; *Phelister haemorrhous*; *Paromalus rouzeti*; *Platysoma venustum*; clown beetles; Neotropical region.

Ruling

- (1) Under the plenary power the Commission has set aside all type species fixations for the nominal genus-group taxon *Phelister* Marseul, 1853 (gender: masculine) preceding that of *Phelister haemorrhous* Marseul, 1853 by Kryzhanovskij & Reichardt (1976).
- (2) The name *Phelister* Marseul, 1853, type species *Phelister haemorrhous* Marseul, 1853 by subsequent designation by Kryzhanovskij & Reichardt (1976), as ruled in (1) above is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *haemorrhous* Marseul, 1853, as published in the binomen *Phelister haemorrhous* (specific name of the type species of *Phelister* Marseul, 1853, as ruled in (1) above), is hereby placed on the Official List of Specific Names in Zoology.

History of Case 3610

An application to conserve the current usage of the generic name *Phelister* Marseul, 1853 for a well-established genus of histerid beetles was received from Michael S. Caterino & Alexey K. Tishechkin *Santa Barbara Museum of Natural History, Santa Barbara, U.S.A.* on 05 October 2012. After correspondence the case was published in BZN 70: 12–14 (March 2013). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this Case. The Case was sent for vote on 1 December 2014 (VP 27). A greater than two-thirds majority of Commissioners voted FOR the Case (17 For, none Against).

Decision of the Commission

At the close of the voting period on 1 March 2015 the votes were as follows:

Affirmative votes – 17: Alonso-Zarazaga, Ballerio, Bouchet, Brothers, Grygier, Halliday, Harvey, Kojima, Krell, Pape, Patterson, Rosenberg, Štys, van Tol, Yanega, Zhang and Zhou.

Negative votes – none.

Bogutskaya, Fautin, Kottelat, Kullander, Lamas, Ng, Pyle and Winston were on leave of absence.

Original references

The following are the original references to the names placed on Official Lists by the ruling given in the present Opinion:

Phelister Marseul, 1853, *Annales de la Société Entomologique de France*, (3)1: 462
haemorrhous, *Phelister*, Marseul, 1853, *Annales de la Société Entomologique de France*, (3)1: 476.

Reference to the type species designation in this ruling:

Kryzhanovkij, O.L. & Reichardt, A.N. 1976. Beetles of the superfamily Histeroidea (families Sphaeritidae, Histeridae, Synteliidae). *Fauna of the USSR*, vol. 4, p. 296.

OPINION 2365 (Case 3612)***Onitis aeruginosus* Klug, 1855 (Insecta, Coleoptera, SCARABAEIDAE):
specific name conserved**

Abstract. The Commission has conserved the specific name *Onitis aeruginosus* Klug, 1855, a junior primary homonym of *Onitis aeruginosus* Perty, 1830. Both names are in use today and have not been considered congeneric since 1859, when the senior homonym was transferred to the genus *Gromphas* Brullé, 1837. A third homonym, *Onitis aeruginosus* Gistel, 1831, which also has priority over *Onitis aeruginosus* Klug, 1855, but cannot be fixed to any species, has been totally suppressed for the purposes of the Principle of Priority and of the Principle of Homonymy.

Keywords. Nomenclature; taxonomy; Insecta; Coleoptera; SCARABAEIDAE; *Onitis*; *Gromphas*; *Onitis aeruginosus*; *Gromphas aeruginosa*; dung beetles; Neotropical region; Afrotropical region.

Ruling

- (1) Under the plenary power the Commission:
 - (a) has ruled that the name *Onitis aeruginosus* Klug, 1855 is not invalid by reason of being a junior primary homonym of *Onitis aeruginosus* Perty, 1830, currently known as *Gromphas aeruginosa* (Perty, 1830).
 - (b) has suppressed the name *Onitis aeruginosus* Gistel, 1831 for the purposes of the Principle of Priority and of the Principle of Homonymy.
- (2) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *aeruginosus* Klug, 1855, as published in the binomen *Onitis aeruginosus*, with the endorsement that it is not invalid by reason of being a junior primary homonym of *Onitis aeruginosus* Perty, 1830.
 - (b) *aeruginosus* Perty, 1830, as published in the binomen *Onitis aeruginosus*.
- (3) The name *aeruginosus* Gistel, 1831, as published in the binomen *Onitis aeruginosus* and as suppressed in (1)(b) above is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology.

History of Case 3612

An application to conserve the specific name *Onitis aeruginosus* Klug, 1855, a junior primary homonym of *Onitis aeruginosus* Perty, 1830 and *Onitis aeruginosus* Gistel, 1831, was received from Mario Cupello (*Departamento de Entomologia, Museu Nacional, Universidade Federal do Rio de Janeiro (UFRJ), Quinta da Boa Vista, São Cristóvão, CEP 20940-040, Rio de Janeiro, RJ, Brazil*) on 07 November 2012. After correspondence, the Case was published in BZN 70: 15–16 (March 2013). The title, abstract and keywords of the Case were published on the Commission's website. One comment and a corrigendum were published in BZN 71: 131–132. The Case was sent for vote on 1 December 2014 (VP 28). A greater than two-thirds majority of Commissioners voted FOR the Case (16 For, none Against, 1 Abstained).

Decision of the Commission

At the close of the voting period on 1 March 2015 the votes were as follows:

Affirmative votes – 16: Alonso-Zarazaga, Ballerio, Bouchet, Brothers, Grygier, Halliday, Harvey, Kojima, Krell, Pape, Patterson, Rosenberg, Štys, van Tol, Yanega and Zhang.

Negative votes – none.

Zhou abstained

Bogutskaya, Fautin, Kottelat, Kullander, Lamas, Ng, Pyle and Winston were on leave of absence.

Original references

The following are the original references to the names placed on either an Official List or Index by the ruling given in the present Opinion:

aeruginosus, Onitis, Klug, 1855, *Berichten über die zur Bekanntmachung geeigneten Verhandlungen der Königlich-Preussischen Akademie der Wissenschaften zu Berlin*, **20**: 651.

aeruginosus, Onitis, Gistel, 1831, *Isis*, **3**: 306.

aeruginosus, Onitis, Perty, 1830, *Delectus animalium articulorum quae in itinere per Brasilian annis MDCCCXVII-MDCCCXX jussu at auspiciis Maximiliani Josephi I. Bavariae regis augustissime peracto collegerunt Dr. J. B. de Spix et Dr. C. F. Ph. de Martius*. Impensis Editoris, Monachii, pp. 39, 40.

OPINION 2366 (Case 3615)***Polybothris* Dupont, 1833 (Insecta, Coleoptera): spelling conserved**

Abstract. The Commission has conserved the spelling of the buprestid beetle genus name *Polybothris* Dupont, 1833. The name was originally published as *Polybotris* but the spelling *Polybothris* has been in prevailing usage since 1900.

Keywords. Nomenclature; Coleoptera; *Polybothris*; *Polybotris*; BUPRESTIDAE; Africa.

Ruling

- (1) Under the plenary power the Commission has conserved the spelling of the generic name *Polybothris* Dupont, 1833.
- (2) The name *Polybothris* Dupont, 1833 (gender feminine), type species by monotypy *Polybothris croesus* Dupont, 1833 is hereby placed on the Official List of Generic Names in Zoology.
- (3) The name *croesus* Dupont, 1833, as published in the binomen *Polybotris croesus* (specific name of the type species of *Polybothris* Dupont, 1833) is hereby placed on the Official List of Specific Names in Zoology.
- (4) The name *Polybotris* Dupont, 1833 (ruled in (1) above to be an incorrect original spelling of *Polybothris* Dupont, 1833) is hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology.

History of Case 3615

An application to conserve the spelling of the buprestid generic name *Polybothris* Dupont, 1833 was received from Patrice Bouchard & Yves Bousquet (*Canadian National Collection of Insects, Arachnids and Nematodes, Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada*), Vítězslav Kubáň (*Department of Entomology, National Museum, Praha 4 – Kunratice, Czech Republic*) & Svatopluk Bílý (*Czech University of Life Sciences, Faculty of Forestry and Wood Sciences, Department of Forest Protection and Game Management, Praha 6 – Suchbátka, Czech Republic*) on 20 December 2012. After correspondence the Case was published in BZN 70: 19–21 (March 2013). No comments were received on this Case. The title, abstract and keywords of the Case were published on the Commission's website. The Case was sent for vote on 1 December 2014 (VP 29). A greater than two-thirds majority of Commissioners voted FOR the Case (13 For, 4 Against).

Decision of the Commission

At the close of the voting period on 1 March 2015 the votes were as follows:

Affirmative votes – 13: Alonso-Zarazaga, Ballerio, Bouchet, Brothers, Grygier, Halliday, Harvey, Patterson, Rosenberg, Štys, Yanega, Zhang and Zhou.

Negative votes – Kojima, Krell, Pape and van Tol.

Bogutskaya, Fautin, Kottelat, Kullander, Lamas, Ng, Pyle and Winston were on leave of absence.

Voting FOR, Grygier said that he was not opposed to the proposals, but was very dissatisfied with the historical summary. As far as he could see, *Polybothris* Dejean,

1836 is an available name under Article 12.2.5 for a concept quite distinct from *Polybotris* Dupont, 1833. Dejean's genus included neither the type species *croesus* of *Polybotris* nor its senior synonym *sumptuosa*. These are, therefore, not just alternative spellings: *Polybothris* is a different name entirely. Nothing was said about its type species; has one ever been designated? These two nominal genera were, in effect, combined by Spinola in 1837, whose use of *Polybothris* must under current rules be deemed contrary to priority, and that is how the matter has mostly rested since then. An explanation was lacking as to why the authorship of *Polybothris* has generally been attributed to Spinola, and not Dejean, and there were no explicit references to non-taxonomic works using *Polybotris* in the 20th Century. He added that there were two side questions: (1) Did Spinola cite Dejean (1836)? and (2) In the account of Spinola's work in para. 4, '*croesus*' is misspelled as '*craesus*'; did Spinola actually spell it that way, or was this a typo? Grygier wondered why the authors of the Case did not propose simply suppressing the almost unused *Polybotris* Dupont. One reason (not stated in the Case) may be that this would leave Dejean, not Spinola, as author of *Polybothris*, and Dejean's genus did not originally include the species that everyone has long accepted as type. Grygier concluded that that being so, the present proposals did make sense, but much of the text leading up to them seemed deficient.

Voting AGAINST, Kojima said that prevailing usage of *Polybothris* seemed to be only among taxonomists working on this beetle group, who could handle this kind of nomenclatural issue within the Code; that is *Polybotris* was the original spelling in Dupont (1833) and *Polybothris* was an incorrect spelling by Spinola (1837), and the original spelling could be kept in this case. Also voting AGAINST, Krell said that assigning a spelling to an author who had not used this spelling was confusing. Also voting AGAINST, Pape said that the genus-group names *Polybotris* Dupont, 1833 and *Polybothris* Spinola, 1837 were different in both spelling and authorship. Creating the name '*Polybothris* Dupont, 1833' would seem an unnecessary chimera. Also, the application appeared to overlook the fact that *Polybothris* was already made available by Dejean (1836) through the inclusion of available specific names.

Original references

The following are the original references to the names placed on either an Official List or Index by the ruling given in the present Opinion:

Polybotris Dupont, 1833, *Magasin de Zoologie*, 3: pl. 77 + 2 unnumbered pages.

croesus, *Polybotris*, Dupont, 1833, *Magasin de Zoologie*, 3: pl. 77 + 2 unnumbered pages.

Polybothris Dupont, 1833 (corrected from *Polybotris* Dupont, 1833), *Magasin de Zoologie*, 3: pl. 77 + 2 unnumbered pages.

OPINION 2367 (Case 3598)***Thyone* Oken, 1815 and *Psolus* Oken, 1815 (Echinodermata, Holothuroidea): names reinstated as available**

Abstract. The Commission has reinstated as available the generic names *Thyone* Oken, 1815 and *Psolus* Oken, 1815, which were introduced by Oken (1815) in a work that was suppressed by the Commission in Opinion 417 because it was not consistently binominal. The names acquired availability from subsequent use by Lesson (1830) with concepts that differ completely from Oken's, and from the currently accepted usage of these names. *Thyone* and *Psolus* are among the most frequently used generic names in the Holothuroidea.

Keywords. Nomenclature; taxonomy; Echinodermata; Holothuroidea; *Thyone*; *Psolus*; *Thyone fusus*; *Psolus phantapus*; sea cucumbers; cosmopolitan.

Ruling

- (1) Under the plenary power the Commission has ruled that the names *Thyone* Oken, 1815 and *Psolus* Oken, 1815 are available from the original publication by Oken (1815).
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Thyone* Oken, 1815 (gender: feminine), type species by monotypy *Holothuria fusus* Müller, 1776;
 - (b) *Psolus* Oken, 1815 (gender: masculine), type species by monotypy *Holothuria phantapus* Strussenfelt, 1765.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *fusus* Müller, 1776, as published in the binomen *Holothuria fusus*, the specific name of the type species of *Thyone* Oken, 1815;
 - (b) *phantapus* Strussenfelt, 1765, as published in the binomen *Holothuria phantapus*; the specific name of the type species of *Psolus* Oken, 1815.

History of Case 3598

An application to reinstate, under Articles 80.7.2 and 81.1 of the Code, the generic names *Thyone* Oken, 1815 and *Psolus* Oken, 1815, was received from Gustav Paulay (*Florida Museum of Natural History, University of Florida, Gainesville, U.S.A.*) and Mark O'Loughlin (*Marine Science Department, Museum Victoria, Melbourne, Australia*) on 06 July 2012. After correspondence the case was published in BZN 69: 276–278 (December 2012). The title, abstract and keywords of the case were published on the Commission's website. No comments were received on this Case. The Case was sent for vote on 1 December 2014 (VP 25). A greater than two-thirds majority of Commissioners voted FOR the Case (17 For, none Against).

Decision of the Commission

At the close of the voting period on 1 March 2015 the votes were as follows:

Affirmative votes – 17: Alonso-Zarazaga, Ballerio, Bouchet, Brothers, Grygier, Halliday, Harvey, Kojima, Krell, Pape, Patterson, Rosenberg, Štys, van Tol, Yanega, Zhang and Zhou.

Negative votes – none.

Bogutskaya, Fautin, Kottelat, Kullander, Lamas, Ng, Pyle and Winston were on leave of absence.

Original references

The following are the original references to the names placed on either an Official List or Index by the ruling given in the present Opinion:

fusus, *Holothuria*, Müller, 1776, *Zoologiae Danicae prodromus, seu animalium Daniae et Norvegiae indigenarum. Characteres, nomina, et synonyma impriomus popularium*. xxxii, Typis Hallageriis, Havniae, p. 232.

phantapus, *Holothuria*, Strussenfelt, 1765, *Kongliga Svenska Vetenskaps-Akademiens Handlingar, Stockholm*, **26**: 263.

Psolus Oken, 1815, *Oken's Lehrbuch der Naturgeschichte. Teil 3. Zoologie*, C.H. Reclam, Jena, p. 352.

Thyone Oken, 1815, *Oken's Lehrbuch der Naturgeschichte. Teil 3. Zoologie*, C.H. Reclam, Jena, p. 351.

OPINION 2368 (Case 3410)***Raja say* Le Sueur, 1817 (currently *Dasyatis say*; Chondrichthyes, Myliobatiformes, DASYATIDAE): original spelling maintained**

Abstract. The Commission has not approved the application to emend the spelling *Raja say* Le Sueur, 1817 to *Raja sayi* Le Sueur, 1817. The original spelling is maintained.

Keywords. Nomenclature; taxonomy; Chondrichthyes; Myliobatiformes; DASYATIDAE; *Dasyatis say*; *Dasyatis sayi*; *Raja say*; bluntnose stingray; Western Atlantic.

Ruling

- (1) It is hereby ruled that the application for the proposed emendation of the specific name *Raja say* Le Sueur, 1817, by ruling that it was an incorrect original spelling, is not approved.
- (2) The name *say* Le Sueur, 1817, as published in the binomen *Raja say*, is hereby placed on the Official List of Specific Names in Zoology.
- (3) The name *sayi* Müller & Henle, 1841, as published in the binomen *Trygon sayi*, is deemed an unjustified emendation of *say* Le Sueur, 1817, the subject of Ruling (2) above, and is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology.

History of Case 3410

An application asking the Commission to rule that the spelling of the name *Raja say* Le Sueur, 1817 (currently *Dasyatis say*) for the bluntnose stingray be changed to *Raja sayi* Le Sueur, 1817 to follow Müller & Henle's (1841) unjustified emendation was received from H.R.S. Santos (*Universidade do Estado do Rio de Janeiro, Brazil*) and M.R. de Carvalho (*Universidade de São Paulo, Brazil*) on 19 April 2007. After correspondence the Case was published in BZN 65: 113–123 (2007). The title, abstract and keywords of the Case were published on the Commission's website. Comments on this Case were published in BZN 67(1): 66–67, 67(2): 167–170. The Case was originally sent for vote on 1 June 2009 (VP18). A majority of Commissioners voted FOR the Case (14 For, 8 Against), but it failed to meet the two-thirds majority required for approval. In accordance with the bylaws, the Case was sent for a revote. On 1 June 2011, the Case was sent for the second round and failed (9 For, 15 Against). The second round was cancelled (nullified) on 19 January, 2012 after it became apparent that an alternative proposal, published in a comment by Commissioner Kojima, asking under the specific powers to rule that *sayi* Müller & Henle, 1841 is an unjustified emendation of *say* Le Sueur, 1817, as published in the binomen *Raja say*, should have been formalised and included in the voting paper as a separate set of proposals. After discussions the two sets of proposals were sent for a new second round on 1 June 2013 (VP 7). The majority of Commissioners voted AGAINST set 1 (10 For, 14 Against), which thus failed, but a majority voted FOR set 2 (16 For, 9 Against), which thus passed, a simple majority sufficing for matters not involving the plenary power.

Decision of the Commission

At the close of the voting period on 1 September 2013 the votes were as follows:

Set 1 (asking the Commission to use its plenary power to rule that *say* Le Sueur, 1817, as published in the binomen *Raja say* Le Sueur, 1817 is an incorrect original spelling):

Affirmative votes – 10: Ballerio, Bouchet, Brothers, Halliday, Harvey, Kottelat, Lim, Rosenberg, Yanega and Zhou.

Negative votes – 14: Alonso-Zarazaga, Bogutskaya, Fautin, Grygier, Kojima, Krell, Kullander, Lamas, Minelli, Pape, Štys, van Tol, Winston and Zhang.

Ng, Patterson and Pyle were on leave of absence.

Set 2 (asking the Commission to use its specific powers to rule that *sayi* Müller & Henle, 1841 is an unjustified emendation of *say* Le Sueur, 1817, as published in the binomen *Raja say*): A majority of Commissioners voted FOR this set (14 For, 10 Against).

Affirmative votes – 16: Alonso-Zarazaga, Bogutskaya, Brothers, Grygier, Kojima, Kottelat, Krell, Kullander, Lamas, Ng, Pape, Patterson, Štys, van Tol, Winston and Zhou.

Negative votes – 9: Ballerio, Bouchet, Fautin, Halliday, Harvey, Lim, Rosenberg, Yanega and Zhang.

Pyle was on leave of absence, but made a comment (below).

In the first round of voting the Commissioners commented as follows:

Voting AGAINST, Alonso-Zarazaga said that the original name must be conserved if usage were split, as was the case. In his opinion the authors did not make it absolutely clear that *D. sayi* was in prevailing use. Also voting AGAINST, Grygier noted that this Case should have been phrased to ask for a definitive choice of one spelling over the other, e.g. by preparing two alternative sets of proposals. He also advised that care must be taken not to misapply the phrase ‘irrespective of how long ago’ in the Glossary’s definition of ‘prevailing usage’. If there were recent works, they alone sufficed as ‘most recent’. Only if there were in fact no recent works, and the ‘most recent’ were from 100 years ago, was it necessary to go back that far. Also, it was not ‘works’ per se that were to be counted in assessing ‘prevailing usage’, but ‘authors’. Looking only at the actual ‘most recent’ works among those cited, since the year 2000 seven authors have used *say* and 11 *sayi*; since 1990 nine authors have used *say*, and 19 *sayi*. This indicated a majority in favour of *sayi*, but a declining majority, and perhaps not a ‘substantial’ majority over either time span (between 1.5 and 2 to 1 in favour of *sayi* over the past one or two decades, respectively). He added that it was thus equivocal whether a state of ‘prevailing usage’ existed, and that he therefore favoured maintaining the original spelling. Voting AGAINST, Kojima said that the opposite proposal (definitive decision that *sayi* is an unjustified emendation even though it is in prevailing use) could be adequate. Fautin, also voting AGAINST, said that prevailing usage was a fuzzy area, and in this case it seemed there was not a strong preponderance of use either way, so priority should therefore rule. Voting AGAINST, Kottelat commented that, as the original spelling was still regularly used, he did not see any reason not to stick to the Principle of Priority. Also, he failed to see how the same name could be on an Official List and at the same time as an

incorrect spelling on the Official Index. The Index lists names, not spellings, he noted. Kullander, who also voted AGAINST, said that the original and correct spelling *say* and the unjustified emendation *sayi* were both in use. Applicants wanted to fix the spelling according to grammar and inferred meaning, while *say* had priority and was in use. He thought that this was also an unnecessary Case, and usage could be established on the basis of the original spelling. Voting FOR, Yanega said that Case 3410 suggested that the authors were confused by the concept of prevailing usage and wanted the Commission to vote on it. He assumed that there was a precedent for using the Commission simply to give its imprimatur on the spelling in prevailing use, if it was possibly contentious.

In the cancelled (nullified) second round of voting, the Commissioners commented as follows:

Voting FOR, Harvey said that this was a clear case of how the Commission's intervention could clear up a small but vexatious form of instability where two versions of the species-group name were in use. The original spelling of a name should not be seen as sacrosanct when there were clear cases of subsequent confusion. He supported the proposal to stabilise the name. Kojima, who voted AGAINST, said that the authors showed that *D. sayi* was not in absolutely prevailing use. Thus the original name, *say*, should have been conserved and the definitive decision that *sayi* was an unjustified emendation should have been made. Voting FOR, Kottelat said that when the original spelling was still regularly used, the argument of prevailing usage of the incorrect spelling was flawed and he would normally stick to the original spelling. He added that, on the other hand, personal names used in apposition were misleading and this one had had a long history of erroneous spelling. Additional confusion was created by the word being very short and identical to a common verb in English (to say). If *say* was retained, the misspelling would certainly continue and the instable situation would perdure. If *sayi* were retained, *say* would soon disappear and stability would be more likely achieved. At a different level, he repeated that he failed to see how the same name could be on an Official List and at the same time as an incorrect spelling on the Official Index and he reaffirmed his previous conclusion that the Index listed names, not spellings. Kullander saw no reason to change his AGAINST vote. He said that the name *say* was in frequent use and had priority. The unnecessary genitive form *sayi* had no innate superiority, and petitioners were mistaken if they insisted that personal names must always be in genitive form. Ng, who voted AGAINST, said that there was no clear consensus which name was the more widely used. Personally, he preferred '*sayi*' but to ensure stability, the basic rules should be observed, so the name should be kept as it was originally spelled – *say* – as a noun. Voting FOR, Rosenberg noted that '*Raja say*' was an inherently confusing name, for reasons given in more detail below. A vote against adding the name *sayi* to the Official List would not prevent authors from invoking Article 33.2.3.1 to maintain the usage of the name; in fact the application itself stated that the name had been in prevailing use.

Comments leading to cancellation of the second round:

Discussing the outcome of the vote, Rosenberg said that the Case was flawed because an alternative proposal had been made in the comments of Commissioners, but the voting paper had not been changed to reflect this. If we vote against the proposal as

it stands, he added, the authors could still invoke prevailing usage to retain the name *Raja sayi*. In fact, they had already stated the epithet to be in prevailing use in paragraph 5 of the application. It would be better to vote explicitly for one resolution or the other. That way the Commissioners would not be endorsing one interpretation of prevailing usage or another. He was also concerned that the voting was biased because only comments 'against' were circulated. Apparently Commissioners who voted in favour did not make comments but he would like to hear what those in favour thought. For his part he voted FOR both times, because he thought '*Raja say*' was an inherently confusing name. Preventing names like this from being introduced to begin with was the reason for Recommendation 31A, which was cited in the application. A biologist encountering this name for the first time was likely to wonder if it was a misspelling, since Say was the name of a well-known author. He noted that the Commission had the opportunity here to remove confusion. He thought that it was preferable to cancel the vote because the result was ambiguous. With the vote, the Commission had not put one name or the other on an Official List or Index, it had just declined to act, but that had left a situation where the authors of the petition had asserted that *sayi* was in prevailing use, so that name should continue in use. Brothers gave the same reasons for his vote, while Van Tol said that the remark of Rosenberg, viz. that Kojima's proposal was not explicitly included in the options, might be a good reason to vote again on this Case during the next voting period (which would mean cancelling the results of the present voting). Pyle said that he agreed that there should have been another vote on this, to provide a definitive answer. However, given that the first vote did not seem to have made a definitive decision, he asked if it was necessary to cancel the previous one. He wondered, if it was possible just to establish a new Case with a more definitive proposal, and then vote on that new Case. He favoured casting a new vote and cancelling the old one. Alonso-Zarazaga supported him saying that he would prefer casting a new vote on the issue, because it was better to give a clear answer to this Case. Grygier pointed out that there was an error in the original Case (para. 5), which wrongly cited Article 33.3.1 when 33.2.3.1 was actually meant (the former pertains to incorrect subsequent spellings).

In the new second round of voting the Commissioners commented as follows:

Bouchet, voting FOR the first set of proposals, and AGAINST the second set, agreed with Rosenberg's comment that '*Raja say* was an inherently confusing name since Say was the name of a well-known author'. Grygier, voting AGAINST the first set and FOR the second set of proposals, reiterated his previous argument. Kojima, voting AGAINST the first set and FOR the second set of proposals, thought that this was a matter of language. To those whose mother tongue was of Latin origin and/or those who are accustomed to such languages the word '*say*' might sound strange as a specific name. On the other hand, those whose mother tongue was not of Latin origin might not find a critical difference between '*say*' and '*sayi*'. Unless the absolutely prevailing usage of '*sayi*' was properly demonstrated, the original name, '*say*' should be conserved and the definitive decision that '*sayi*' was an unjustified emendation should be made. Kullander, voting AGAINST the first set and FOR the second set of proposals, said that patronyms as nouns in apposition were perfectly acceptable. Yanega, voting FOR the first set of proposals and AGAINST the second set, explained his vote by reiterating a comment by Bunkley-Williams & Williams 'I

hope we are correct in our assumption that the Commission exists to eliminate confusion’.

Voting on Set 2, the Commissioners commented as follows:

Voting FOR, Brothers said that since the Commission had not agreed to validate the spelling *sayi*, a definitive decision on its status was required. Voting FOR, Kottelat asked to finalize the Case. He reminded that even if the wording of the original application did not state so, its aim had been to end the confusing usage of both *say* and *sayi*, and the procedure of voting could be made more efficient to make the revote of Jun 2013 the final vote on the entire Case, whether or not one set of proposals had been added. Voting FOR, Winston said that many nouns in apposition were used in the past. Taxonomists who wanted to honour a popular scientist often tried to figure out ways to put the honoree’s name a little differently than others had done, e.g. using last name in genitive, using last name as noun in apposition, combining first and last names, using first name, etc. Not all nouns in apposition are patronyms, some are even tautonyms. All of them could be seen as confusing (although mainly to those who studied Latin). Allowing this change set a precedent that could result in a whole lot of ‘confusion’ to eliminate if those working on other groups decided to do likewise. Also voting FOR, Kojima said that under the condition that Set 1 had failed, unless Set 2 were approved, either *say* or *sayi* would continue to be used, increasing nomenclatural instability. Also voting FOR, Alonso-Zarazaga said that this was a good Case for making the Committee for the Fifth Code think about the opportunity of suppressing specific names based on personal names in apposition retroactively (like *Dasyatis say* or *Acestrura mulsant*), making mandatory the use of the genitive form and avoiding confusion. This would considerably simplify the Code as well, he added. Voting AGAINST, Halliday said that the original species name *say* was correctly formed. The change from *say* to *sayi* was an unjustified emendation. The name *sayi* did not have a substantial majority of prevailing usage, so it could be protected under Article 33.2.3.1. Formal application of the Code therefore led to the inevitable conclusion that *say* should be regarded as correct. However, if the name *say* was retained, that decision would not be respected by the community, the spelling *sayi* would persist in usage, and nothing would be achieved. The only way to achieve stability was to vote in favour of *sayi*. Also voting AGAINST, Rosenberg explained that he voted so as it was inherently confusing to have a personal name, particularly the name of a zoological author, used as a noun in apposition. Also voting AGAINST, Bouchet said that he saw no reason to change his earlier vote, as he believed *Raja say* was an inherently confusing name. Also voting AGAINST, Yanega said that he was still of the opinion that the Commission’s goal to promote stability in nomenclature was more important than adherence to strict priority; as such, there was ample evidence that so long as the name *Raja say* was considered valid, people would continue to be confused by it, and continue to misspell it as *sayi* even if there was a Commission ruling declaring *sayi* invalid. Such a ruling would not prevent the incessant reappearance of *sayi* in the literature, and would, therefore, not stabilise the nomenclature. The existence of other species with similarly-formed epithets was irrelevant, especially in that none are such prominent species as this one; the body of literature for this one species is vast, as is the impact of the instability, he added.

Original references

The following are the original references to the names placed on either an Official List or Index by the ruling given in the present Opinion:

say, Raja, Le Sueur, 1817, *Journal of the Academy of Natural Sciences of Philadelphia*, **1**(3): 42.
sayi, Raja, Müller & Henle, 1841, *Systematische Beschreibung der Plagiostomen*, Berlin, p. 166.

Electronic publications need registration in ZooBank to be available

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Abstract. The 2012 Amendment to the International Code of Zoological Nomenclature allows electronic publication for nomenclatural purposes if certain requirements are fulfilled. We here explain these simple requirements, including what needs to be registered in ZooBank and when, which version of an electronic work is potentially Code-compliant (only the final, immutable version), and what is the correct date of publication (that of the final, immutable version; pre-final versions posted online are preliminary and as such always unavailable). We advise registration in ZooBank of publications that are issued in both electronic and paper version to secure the nomenclatural priority of the generally earlier electronic version. Failure to update a ZooBank record after publication will not have any impact on availability under the Code but will keep the registered information hidden from public view. Publishers may want to consider automated registration as an integral part of the publishing process; this has already been shown to be feasible and would ease the burden of manual registration for editors and authors.

Keywords. Availability; date of publication; electronic publishing; nomenclature; registration; works; ZooBank.

Scholarly communication has reached a point where most literature is distributed and consumed electronically (Tenopir et al., 2015). Paper copies may still be produced, but the electronic versions enjoy the vast majority of access and use. Most traditional print journals of major publishers make articles accessible on the internet long before the paper version is printed, and a growing number of journals are exclusively electronic.

In 2012, the *International Code for Zoological Nomenclature* (ICZN, 1999) was amended to allow for new names and nomenclatural acts to be established in works published electronically (ICZN, 2012). The amended rules included provisions specific to electronic forms of publication, in order to make such works available under the Code. In consideration of the ephemeral and sometimes malleable nature of electronic documents, the Commission introduced specific, but relatively simple requirements for electronic publications over and above those required for paper-printed works (ICZN, 2012; Krell, 2013, 2015; Cranston et al., 2015), which stipulate that electronically published works must:

- have fixed content and layout (Article 8.1.3.2)
- be issued after 2011 (Article 8.5.1)
- state the date of publication within the work itself (Article 8.5.2)
- be published in a work with an ISBN or ISSN (Article 8.5.3.2)
- be registered in the *Official Register of Zoological Nomenclature* (i.e. ZooBank) (Article 8.5.3)
- contain evidence in the work itself that such registration has occurred (Article 8.5.3)
- be registered with the name and Internet address of an organization other than the publisher that is intended to permanently archive the work (Article 8.5.3.1)

The first four requirements impose no significant burden, as they are either trivial or already an integral part of our contemporary scientific culture. Only the remaining three conditions are different, in that they represent a novel kind of requirement reaching beyond the routine publication of a scientific paper. In particular, the requirement to present evidence of registration within the work itself necessitates registration to happen *in advance* of publication. Also, neither the ISBN/ISSN nor the intended archive need to be stated in the work itself; currently approved archives include Bioline International, Biotaxa, British Library online archive, CLOCKSS, German National Library, Harvard Digital Repository Service, Hathitrust, LOCKSS, National Digital Heritage Archive of the National Library of New Zealand, National Library of Australia, Portico®, PubMedCentral®, State Library of Queensland, Virginia State Publications Depository Program, and Zenodo.

Unfortunately, registration does not always happen for electronically published works with new nomenclatural data, and authors, editors and publishers are not always aware of what details need to be registered (and when). Our intention is to clarify the requirements of the 2012 Amendment (ICZN, 2012) for making electronic works available, with special focus on registration.

What is Registration?

ZooBank (zoobank.org), the official registry of zoological nomenclature, was first proposed in 2005 (Polaszek et al., 2005). It was initially launched on 1 January 2008, and continues to grow and evolve (Polaszek et al., 2008; Pyle & Michel, 2008, 2009, 2010; Krell & Pyle, 2010). Anyone with a functional email address is free to establish a ZooBank login account, and register authors, works, and new names established in the family-, genus- and species-groups. Registration simply means that a record is established in ZooBank and a permanent and globally unique identifier has been assigned.

According to the amended Code (ICZN, 2012), only works produced electronically are required to be registered. Works produced on paper (and in accordance with other provisions of the Code) are not required to be registered, but the ICZN strongly encourages registration of such works. Also, the Code does not require registration of new names or nomenclatural acts for any publication (electronic or paper), but the registration of new names is strongly encouraged (Rosenberg et al., 2012). Registration facilitates automated indexing, linking and data extraction, and increases the visibility of new taxa. ZooBank does not currently support the registration of other kinds of nomenclatural acts (e.g. type designations, emendations, first reviser

actions), but support for these is planned. Finally, ZooBank is intended for the registration of works and nomenclatural acts governed by the ICZN Code; registration of taxonomic acts not governed by the Code (e.g. subjective synonyms and new combinations, and names above the family group ranks) is neither supported nor planned.

Why some ZooBank registrations are invisible: Updating the ZooBank record after publication

An important requirement of the amended Code is that evidence of registration (such as the ZooBank registration number) must be included within the work itself. This means that the work must be registered *before* it is published, but pre-publication registrations are hidden from public view on the ZooBank website to prevent premature release of unpublished information. To release the registered information to the public view, the ZooBank record must be updated *after* publication to include the publication date (as well as other optional publication metadata, such as volume number and pagination). This update should be done by the contributor who initially registered the work before publication. Failure in updating the ZooBank record with the date of publication will keep the registered information hidden from public view, but will not have any impact on the availability (under the Code) of the published work or any included new names or nomenclatural acts. It is just inconvenient and confusing to users consulting ZooBank who try to find a particular record in ZooBank, but are unable to do so because the publication date has not been entered.

What is an *electronic work*?

The Amendment requires works published electronically to be registered in ZooBank to be available, but there is some confusion about what *works* are and what counts as an *electronic work* that is subject to mandatory registration to be available. Most of this confusion derives from the fact that many publications currently produce articles in both electronic and paper form, often at different times and in different versions.

The Code defines *work* as ‘Any text or illustration, whether published, unpublished, or carrying a disclaimer’. ‘Any text or illustration’ is admittedly a useless definition to determine what needs to be registered in ZooBank. Works that need to be registered are the entities we cite in the references section: journal articles, book chapters, books, published abstracts. Registration of a journal, a journal volume, or a journal issue does not count as registration of an individual work and does not make the nomenclatural acts therein available.

If the authorship of a chapter of a book differs from the authorship of the book, it is useful to register the chapter separately. Because ZooBank currently does not offer this feature to users, details for such registrations should be sent to the ZooBank administrator by email (address under the ‘contact’ menu on the ZooBank webpage).

An *electronic work* is ‘A publication issued and distributed by means of electronic signals.’ Most people associate electronically published works with Portable Document Format (PDF) files. Although a PDF document is cited as an example of an electronically published work within the amended Code, the rules allow for any electronic document that is both ‘widely accessible’ and has ‘fixed content and layout’ (Article 8.1.3.2). In cases where a publication is distributed electronically prior to the

paper edition, the publication must be registered in ZooBank (and conform to the other requirements of the amended Code) if the new names and other nomenclatural acts are to be considered available from the date of the electronic edition.

Works published both on paper and electronically – priority issues

Many (if not most) modern journals that publish paper editions also produce electronic editions (e.g. as PDF) of the articles they contain. When publishing in a paper journal, it is easy to forget the implications of a parallel electronic edition that might be issued much earlier than the paper edition and potentially result in an earlier publication date (in the sense of the Code). If such an earlier electronic version is the final, immutable version, but is not registered in ZooBank (or is registered but fails to conform to the other requirements for electronic works, such as failure to include evidence of registration within the work itself, or no indicated online archive for the work in ZooBank), the article would be available from the later date of the paper edition. Article 21.9 of the Code states, ‘A name or nomenclatural act published in a work issued in both print and electronic editions takes its date of publication from the edition that first fulfilled the criteria of publication of Article 8 and is not excluded by Article 9.’ If the electronic version fulfils all requirements of the Code, its earlier publication date is to be used to establish nomenclatural priority. Authors may unnecessarily delay nomenclatural priority of their electronically published works and nomenclatural acts, if they fail to register and fulfil other requirements of the Code. Moreover, publishing a final version electronically that is unavailable for nomenclatural purposes potentially creates confusion, because it will be read, used and cited as if it were available anyway. Authors should avoid publishing works that appear to be final and nomenclaturally available, but are not. When in doubt, it is generally best to register all books and articles containing Code-governed nomenclatural acts before publication and comply with other requirements for electronic publication even if they are published on paper at some point.

So many versions of my paper: How do I determine the ‘final, immutable’ version?

Most scientific journals produce electronic copies of articles prior to the paper edition, or prior to the final electronic journal issue. These electronic versions come in all forms, including unedited accepted manuscripts, uncorrected proofs, and the version of record, often released before being integrated into a journal issue. The publishing world has been well aware of the potential confusion these different versions of what is intended to be one and the same publication can cause. Guidelines have been established defining and controlling these versions, published by the National Information Standards Organization in partnership with the Association of Learned and Professional Society Publishers (NISO/ALPSP, 2008). These NISO Recommendations are widely accepted and followed by publishers.

For nomenclatural purposes, only the final version with immutable layout and content is relevant (i.e. is available). If the content of an early electronic version is open to potential corrections, edits or similar changes in the work itself, this early electronic version is to be considered unavailable for nomenclatural purposes. In publishers’ terms (NISO/ALPSP, 2008), the final, immutable version is the *Version of Record*. In a separate article, one of us analysed which kinds of early online publications are available for nomenclatural purposes: Some publishers only publish

the version of record online, some post earlier versions (Krell, 2015). According to NISO/ALPSP guidelines, bibliographical metadata such as volume, issue and page numbers are not part of the content and do not change the version of record if added or changed when the article gets integrated into a journal issue. This would be a sensible way to interpret the requirement of ‘fixed content and layout’, but some authors disagree and consider the version of record integrated into a journal issue to be a different work from the version of record published in advance, because of changed page numbering and added volume and issue number and other metadata (Dubois et al., 2015). We do not support this view, but this issue will continue to be debated by the broader taxonomic community, and will be clarified in the next edition of the ICZN Code.

With all these versions, which is the correct date of publication?

Journals that publish early online versions of their papers in most cases use the date of the early online publication as the date of publication for the work. The rationale behind this practice is that intellectual priority of content is established with the first posting on the web, be it as an accepted, unformatted manuscript, as uncorrected or corrected proofs, or as the final version. Note that intellectual and nomenclatural priorities are different. Nomenclatural priority can only be established from the final, immutable version (version of record), not from a previous, preliminary version.

To minimize confusion, it is important that publishers ensure that the stated date of publication, as included within electronic publications (required by Article 8.5.2), accurately reflects the date on which the electronic work actually fulfilled the requirements of the Code. As a general rule, this should be the date of publication of the version of record, not of the first posting of a preliminary version. Although a misstated date does not necessarily render the work and any nomenclatural acts it contains unavailable under the ICZN Code, it does make it extremely difficult to determine the actual date of publication of the electronic work for purposes of nomenclatural priority. If the actual date of publication cannot be determined, then the publication date for nomenclatural purposes is 31 December of the year of publication unless other evidence for earlier publication can be provided (Article 21.3.2 of the Code). Not stating the exact date of publication of the version of record is a disservice to by delaying their nomenclatural priority.

This is a general problem of many publishers, whether their early electronic versions are versions of record or earlier, nomenclaturally unavailable versions. Publishers need to be aware of those complications, which are easy to fix but rather counter-intuitive to people primarily concerned with establishing intellectual priority.

What happens if not all requirements of the Code are fulfilled?

In some cases, the electronic edition of a work is obtainable before the ZooBank record is completed (e.g. missing indication of the intended archive or ISSN/ISBN). There are no clear ICZN-sanctioned rules for determining the date of publication for purposes of priority in such cases, but the general consensus among commissioners is that the date of publication (in the sense of the Code) should be interpreted as the date on which all requirements of the Code were satisfied. To help avoid potential confusion, it is always best if authors, editors and publishers of electronic works

ensure that all mandatory information is included in the registration before publishing the final, immutable version.

Advice for authors

Any author who is concerned about the nomenclatural priority of his or her work should ensure that the publisher has a firm routine for ZooBank registration. Alternatively, the author can register his or her work in ZooBank and enter required details (see above) during the revision or proofing stage. The work will then be available from the publication of the version of record (given that all other requirements of the Code are fulfilled).

Advice for publishers

Publishers should state the date of publication as the date on which all requirements of the Code are fulfilled, which is at the earliest when, in publishing terminology, the version of record is published. This date of publication should be stated instead of (or in addition to) the date of the first posting of a preliminary version. This will reduce confusion when determining nomenclatural priority.

Easing the burden: Automated registration as an integral part of the publishing process

Although the task of registering a work or a new name in ZooBank requires only a few minutes, it might be perceived as a burden. Moreover, manual registration carries a risk of errors. ZooBank was developed to include an automatic registration process to allow registration to be integrated into the publication workflow. This automatic registration process is based on the *TaxPub* standard for XML markup, an extension to the Journal Tag Publishing Suite of the National Library of Medicine (NLM; Catapano, 2010; Penev et al., 2012). Such NLM standards are increasingly becoming adopted by scientific publishers, and the journal *ZooKeys* (Pensoft Publishers) has demonstrated the feasibility of the implementation of *TaxPub* into the publication process of a largely taxonomic journal. Starting with issue 346 (published in November 2013), *ZooKeys* has very successfully incorporated automatic registration in ZooBank (Erwin et al., 2015). While the ICZN is not in a position to prescribe how publishers should produce their journals and books, we suggest that the expanding adoption of NLM standards (including *TaxPub*) among professional publishers in the field of taxonomy will greatly improve compliance with the ICZN rules for electronic publication. The advantages of incorporating NLM standards (including *TaxPub*) go well beyond automatic registration in ZooBank. By themselves, PDF documents represent little more than electronic versions of paper documents. While this certainly simplifies dissemination, the true power of electronic publication comes from structured data embedded within these electronic documents. Extensible Markup Language (XML) is the widely adopted standard for distributing structured data in electronic documents via the internet. While many journals produce XML editions of their published articles, the power of doing so is dramatically improved when the XML schema conforms to an international standard (such as NLM).

Acknowledgements

Rich Pyle (*ZooBank Developer and ICZN Commissioner, Bishop Museum, Honolulu, HI*) was instrumental in clarifying our arguments, helped us to avoid misunderstandings and informed us about the status of automated registration in ZooBank. We are

grateful for his substantial contributions to this paper. Svetlana Nikolaeva (*ICZN Secretariat London*) commented on the manuscript.

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Nomenclatural availability of preliminary electronic versions of taxonomic papers: in need of a clear definition

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Abstract. The question of the nomenclatural availability of preliminary electronic versions of taxonomic papers, distributed online ‘ahead of print’ by some journals and publishing companies, is addressed again. We disagree with Krell’s suggestion to ‘distinguish between content and bibliographical metadata’. The concept of ‘bibliographical metadata’ does not exist in the Code and should not be incorporated into it. The citation of publication date, issue and page numbers are part of the relevant information that is useful in bibliographic references, in text citations and in synonymic lists that appear in taxonomic publications (which have a much longer life than most other publications), and should be considered part of the ‘content’ of a taxonomic paper. In particular, the page of first appearance of a name or of a nomenclatural act is traditionally cited in taxonomic revisions, monographs, faunas and catalogues, whether printed or stored in online databases, and this information is very useful for serious taxonomists. Having two different sets of information in this respect, in a first version of the work first published online but then discarded from the website of the journal, and in a subsequent one included into a journal issue, would be an indisputable source of confusion, which would not be solved by calling artificially both these versions the ‘version of record’ as if they were identical. The fact that ‘pagination is not regulated’ by the Code is fully irrelevant here: many aspects of taxonomic works are not regulated by the Code but are of crucial importance for the discipline of taxonomy. Krell’s proposal is motivated, according to his own words, by some publishers’ desire to make their publications more ‘attractive as outlets of taxonomic research’. But the purpose of the Code is not to make some journals more attractive than others; it is to help working taxonomists in their daily work, to make it easier, more straightforward, efficient, reliable and useful, and less prone to ambiguity. We recommend rejecting Krell’s suggestion. On the other hand, we make the new proposal of the creation of a ‘label’ to which some online journals and publishing companies might adhere, taking the engagement to publish online only one single version of each paper, with its final date, issue number and pagination. Authors will then have the possibility to choose their publication outlet among those having this label or those following the practice of ‘early view’. Currently, such preliminary versions of papers are unavailable under the 2012 Amendment of the Code.

Who is the Code for?

Nomenclatural availability of works, names and nomenclatural acts is the first step of the nomenclatural process. Whenever dealing with problems of homonymy or synonymy between names, it is crucial to know the date when each name was made

available, because priority of publication is the main criterion of precedence among names and nomenclatural acts, although other criteria are used in some cases (see Dubois, 2013). Authorship is also linked to availability, but it is much less important than date, as it plays no role in the nomenclatural process itself (Dubois, 2015). The date of availability of a name is the date of public distribution of the work which not only contains the new name but also complies with the conditions of the Code (ICZN, 1999) regarding availability.

We recently (Dubois et al., 2015) pointed out the fact that preliminary electronic versions of taxonomic papers are not nomenclaturally available because of Article 9.9 of the 2012 Amendment of the Code which writes that ‘preliminary versions of works accessible electronically in advance of publication’ are not ‘published works within the meaning of the Code’. This completes Article 8, which requires that, to be nomenclaturally available, a publication must ‘be issued for the purpose of providing a public and permanent scientific record’ (Article 8.1.1) and have a ‘fixed content and layout’ (Article 8.1.3.2). We stated that, according to this Amendment, only the final version, with the final publication date, Volume and issue number, and pagination, provided nomenclatural availability to the new names and nomenclatural acts they may contain. Krell (2015) argued against this conclusion, on the ground that ‘page numbers are simply a finding aid’ and that following our arguments would render ‘journals with a print version less attractive as outlets for taxonomic research’.

We understand this as meaning that the existence of preliminary electronic versions (preview) of papers is seen by some commercial publishers at least as an argument of promotion for their journals, which is supposed to give them some advantage in the commercial competition with the journals that do not practice this. It appears to us that Krell suggests the Code should be modified in order to comply with the request of these publishers to continue their current practice despite the statement of the Code that preliminary online publications are not nomenclaturally available.

This leads us to ask the following question: for whom is the Code intended? Is it for authors of taxonomic papers or is it for commercial publishers? Should the requests of the latter be considered more important than those of taxonomists? According to the Preamble of the Code, ‘The objects of the Code are to promote stability and universality in the scientific names of animals and to ensure that the name of each taxon is unique and distinct’. Both taxonomists and publishers should work in order to fulfil these aims in the most straightforward way.

Metadata

Metadata can be defined as a ‘structured information that describes, explains, locates, or otherwise makes it easier to retrieve, use or manage an information resource, especially in a distributed network environment like for example the internet or an organization’ (De Carvalho Moura et al., 1998). The difference between an unpublished work and a publication is that the latter is in a ‘final’ form which is recognized as such by the scientific community. This distinction was easy to do on technical grounds with the printing method, as a written or typed manuscript and a printed document are readily distinguishable, the only possible confusions being between the final published document and a ‘proof sheet’ (see Article 9.5) or a ‘separate’ distributed in advance of the specified date of publication (see Articles

21.8.1–2). But electronic publications cannot be distinguished on technical grounds only, as the same techniques are used for manuscripts, proofs at various stages, preliminary publications and final publications, and, a point that should not be neglected, it is to be expected that such techniques will have a very short existence and will soon be replaced by others. For this reason the NISO/ALPSP JAV Technical Working Group provided a very useful analysis of various situations encountered regarding the different ‘Journal Article Versions’ of electronic publications (NISO 2008). It is clear from this work that the practices are not yet stabilised and will still move, so that the working group did not only provide a description of the current situation but also proposed ‘conventions and best practices’, mostly directed towards publishers, where they suggest what ‘should’ be done, but only the future will tell if these recommendations will be followed. Unfortunately, this NISO working group does not seem to have included specialists of nomenclature, as some particularities of this discipline were ignored, in particular the fact that nomenclature follows an (untold) Principle of Nomenclatural Foundation (Dubois 2011, pp. 16–17), according to which a nomenclatural act once published cannot be ‘corrected’ or modified subsequently, except by the Commission acting under its plenary powers.

The NISO recommendations proposed that the metadata associated with documents should include descriptors of the various stages of a journal article lifecycle. Five major stages were recognized, four of which (Author’s Original, Submitted Manuscript under Review, Accepted Manuscript, Proof) clearly cannot be considered as published in the frame of the Code, whereas the fifth stage, Version of Record (VoR), must be considered published. The NISO proposal mentioned the possibility that in some cases two further steps be recognized, the Corrected Version of Record (CVoR) including corrections, and the Enhanced Version of Record (EVoR) including modifications. According to the JAV Working Group, documents of all three VOR categories have to be considered published, but they are clearly different *versions*, not the same document. In many fields of science, the most important version, which must be cited, is the last updated version, i.e. the VoR, the CVoR or the EVoR, but this is not true in nomenclature. If the two stages after VOR are evaluated in the light of the Code, they are all different *publications* as they have different contents and layouts, and different publication dates, and any new name or nomenclatural act they may contain is available from the first published version (VoR), if this version complies with the requirement of having been ‘issued for the purpose of providing a public and permanent scientific record’. In zoological nomenclature, any so-called ‘correction’ of the original VoR qualifies as a new publication and may have nomenclatural consequences: for example, a ‘correction’ of spelling of a new name published after the original publication is a subsequent spelling which has a status distinct from that of the original spelling (Article 33), except in the very particular and exceptional case of an ‘incorrect original spelling’ (Articles 32.4–5).

In our paper we had mentioned some elements that are sometimes changed between the ‘preliminary online version’ of a paper and its ‘final version’. These included the date, the Volume and issue, the pagination and the layout (e.g. even *vs.* uneven page), but this is not a closed list. Dubois et al. (2013) had discussed several examples in which the preliminary online version and the final version differed in other aspects of the ‘content and layout’ of the text, figures and tables.

Cranston et al. (2015) and Krell (2015) stated that some elements of electronically published papers were metadata that should not be considered part of the ‘original content’ of a paper. This is a purely arbitrary statement. In the Articles of the 2012 Amendment cited above, there is not the slightest indication that some of the elements of a paper are not concerned by the requirement of absence of modification in content and layout (see Article 8.1, especially 8.1.3.2). This is straightforward: it means that any change introduced in a work published online disqualifies it as a document providing ‘public and permanent scientific record’ (Article 8.1.1). Following Cranston et al. (2015), Krell’s (2015, p. 29) proposal reads as follows: ‘**Version of Record**. The final version of a publication that has immutable content and layout and will be archived (this excludes electronic supplements that are not part of the archived work itself). Bibliographical details, such as page numbering, issue and Volume number, of a Version of Record can change or be added, e.g. if it gets included into a journal issue after publication’. This proposal is not Code-compliant and has no support in the centennial practices of zootaxonomists and in the basic philosophy of the Code, which is that an original publication cannot be modified *at all* subsequently, because then it would become another publication.

We do not think that it is useful to introduce the term ‘metadata’ into the Code, but if so, such a change should be guided by what has been the usage in zoological nomenclature so far, regarding the way different versions of printed papers have been treated concerning availability and other nomenclatural issues.

Pagination, issue and Volume, publication date

Dubois et al. (2015) stated that changes of pagination of a paper resulted in a different document, therefore a distinct publication. Preliminary online versions that are unpaginated or that have a ‘provisional’ numbering of pages starting on page 1 do not allow subsequent citation of the exact page of appearance of a nomen or nomenclatural act as indicated by a page number in a paper. We stated that this would be a source of ambiguity for taxonomists but Krell (2015) dismissed this statement, arguing that ‘Citations of page numbers are simply a finding aid’. He considered that the absence of the final pagination in the preview document ‘is not a problem for the Code, since pagination is not regulated. Pages or pagination are mentioned in only two Recommendations of the Code (...) and not in any mandatory part of the Code’. In the same line of thought, some might argue that, when dealing with electronic publication, the function ‘search’ may allow us to find the relevant information in a ‘portable document’ (PDF) and that we do not need to have a page number.

The JAV Working Group discussed a ‘Base Case’ in which a paper was first published online, ‘without issue pagination, but with a DOI for identification’ (NISO, 2008, p. 7). This group considered this unpaginated version as the VoR, giving the ‘official publication date’. Then they wrote: ‘When the print issue is scheduled to be compiled, the publisher adds Volume, issue, and page numbers [VoR—addition of bibliographical details not sufficient enough to change status of VoR]. The article is published in print and electronic form with pagination and added features (e.g., citation tracking), and the author adds a URL link to this version [VoR]. The published version of the article remains available from the publisher’s site, or from a third-party aggregator’s site, or from an archival site [VoR].’

We disagree with these statements, at least for publications that contain nomenclatural novelties. As shown in detail by Dubois et al. (2013), a DOI is by no means a reliable indicator of permanency of a document, as a PDF can be largely modified and keep the same DOI. In nomenclature, this may have important consequences, for example when the original spelling of a name is changed (even by a single letter) but the DOI kept the same. The statement ‘not sufficient enough to change status of VoR’ is unsubstantiated: what is the meaning of ‘sufficient’ in this phrase, and sufficient for which purpose? Finally, the version of the paper which ‘remains available from the publisher’s site’ is the paginated one, which replaces the unpaginated one on the publisher’s website and the latter then becomes inaccessible to the readers. Therefore, in our opinion, at least for the purpose of zoological nomenclature, a change in the pagination of a document results in a new version of this document.

Page numbers are indeed a ‘finding aid’, but they are nevertheless part of the paper! A page number allows pinpointing a particular citation or nomenclatural act. This device is sometimes used within the text of a paper itself, not only in the header or footer of the page, for example when some information to be found in another part of the paper is referred to in the text as “see page 253”. In such cases, considering this as ‘bibliographical metadata’ would require to consider that a change of this page number in the text, in order to agree with the new pagination, does not modify the ‘layout and content’, which is absurd.

An electronic search may be very time consuming if the terms searched appear many times in a work, and above all it does not allow to point to a particular occurrence, citation or information, so an ambiguity may subsist. Furthermore, the search function cannot be used when one is working on a paper print of a PDF, and when several hundred pages are involved this may not be very ergonomic.

Such a discussion may appear to focus on trivial details for outsiders of taxonomic research or newcomers in the field, but not for professional and amateur taxonomists involved in a real daily research work in taxonomy. As a matter of fact, the core of taxonomic research is not the isolated description of species, genera or other taxa, but revisions and large monographs (including some databases) dealing with taxonomic groups or faunas. Thousands of synonymic lists have been and are still being published in these works, in which the first pages of appearance of all nomina and nomenclatural acts are given. Krell himself (2010, 2012; Krell et al., 2012) published synonymic lists and papers which mention pagination. In such works, which may cover large Volumes or series of Volumes, hundreds or thousands of names, nomenclatural acts and references are cited, and having the reference not only of the work but also of the page where a precise information appears is a very important help for serious work. Especially when it concerns long monographs of several hundred pages, this mention of the page allows saving working time and energy, and it avoids confusions between homonymous names. For example, in Latreille (1804), the name *Apodes* designates three distinct taxa, mentioned on pages 73, 75 and 103, so that citing the name *Apodes* as of Latreille (1804) without mention of the page and looking for it with an electronic search option would not allow knowing which of these three homonymous names is concerned.

Taxonomy is a domain where it is not enough to know ‘vaguely’ what has been written in previous publications, as if this information had become ‘well known’ and trivial. In taxonomy, every time the classification of a taxon (e.g., a family or a genus)

is revised, challenged and eventually modified, this is liable to introduce changes in the nomenclature, and this should be checked carefully before publishing nomenclatural novelties. For example, whenever there is a change in the concept of a taxonomic species, resulting in the distinction of two species instead of one, the proper course to follow is not to immediately describe the 'second' species as new (although this tends nowadays to become standard practice for some authors and in some journals), but first to check whether there exists already an available name for it, that would have remained 'hidden' or 'sleeping' in the synonymy of the 'first' species (or even of a third one). Page reference is also useful in various other situations, e.g. for checking the validity and priority of a subsequent type species designation for a genus, or of a first reviser action choosing between two spellings or two competing synchronous synonyms or homonyms. In the absence of reference to a page, finding this information may be a very long and tedious task. Taxonomic research permanently requires one to go back to ancient literature. If the work at stake is an electronic one, except during the short period between the 'early view' and the 'in print version', the only document which will be available online for decades and for all users will be the final one, the first one having disappeared from the screens for ever. Citing this 'phantom reference' would then only be a source of confusion, doubt and instability.

No quibble about metadata will be able to erase the fact that a paper paginated from page 1 to page 26, or without pagination, is not identical with a paper paginated from page 136 to 161, that a paper published without mention of the number of the Volume where it will be included is not identical with a paper having the same 'content' but referred to Volume **134**, that a paper dated 2013 is not identical with a paper dated 2014, or even dated 11 February 2014 is not the same as one dated 4 June 2014, etc. These distinctions have always been made in taxonomy and even if the content is the same, the publications must be considered distinct.

Contrary to many publications in other fields of research, taxonomic publications are cited for many decades, and this demands to treat them differently from standard scientific publications which are often obsolete after 20 years or less. The confusion that might be introduced in the taxonomic literature by the existence and citation of two different documents differing by their metadata is not worth the small 'advantage' that a hurried publication online might have in a few rare cases. Taxonomy does not need quick publications, it needs serious and solid ones. A major motivation for shortening the publication delay of a taxonomic work is not scientific, it is the importance given by many taxonomists for being credited with the 'authorship' of new names, a motivation which is a terrible nuisance for the science of taxonomy (Dubois, 2008, 2015). The delay between the preliminary work with provisional metadata and the final one with the definitive ones will in general be of a few weeks or months, at most of a few years. This is a drop of water in the ocean of time which is the working time of taxonomy. If Krell's advice was followed, this might 'please' some publishers and authors, but taxonomists would have to carry for ever the confusing situation of citing two documents which are supposedly the same but are in fact different. In 50 years from now, if taxonomy still exists, we would still have to find in synonymies of revisions and monographs some references to a final document with definitive page and issue numbers, and in parallel some other references to the 'same' work but in a provisional version with different page numbers and no issue

number—although this version would have been available online only for a few weeks or months and then have disappeared from all websites and have become unavailable to the whole scientific community, except the individuals or institutions that would have downloaded it during the small period of its availability as a ‘preview’ document. This is not serious!

As active practising taxonomists, we do not want to have to deal with unpaginated works or with works with floating or labile information on page and issue numbers and even on date according to the version, or with unknown Volume and issue and just a publication year, which may change later like in the example discussed by Dubois et al. (2015). We are sure that many taxonomists having a real and permanent occupation with this domain of research agree with us, and that if asked whether the pagination is relevant information in a taxonomic publication, the majority of active and experienced researchers will reply ‘Yes’.

It is true that the Code does not regulate pagination, but this does not mean that two documents differing in page numbers are considered identical in nomenclatural practice. The Code does not prescribe the citation of page numbers and so what? The Code is not a Code of taxonomy or of bibliography; it is a Code of nomenclature. It does not have to legislate on matters that are outside nomenclatural rules, such as the way references should be cited (including that of the Code itself, by the way) or whether it is important and useful or not to cite the pages where some information appears in papers. If considered relevant here, the same argument would need to be considered relevant for about 99 % of the contents of taxonomic publications, which are not properly nomenclatural. The Code does not prescribe the use of a microscope to study specimens or a sequencer to study nucleic acids. These are elements which are needed for a good taxonomic work, irrespective of nomenclatural rules. The question is not ‘is it in the Code?’ but ‘for taxonomists, is the abandonment of pagination and issue numbers progress or not? Is it useful, does it have advantages?’ This is the only metric that should be considered for nomenclatural rules, not the fact that this abandonment may be viewed as more practical, comfortable or attractive.

In disciplines that do not have the constraints of zoological nomenclature about the ‘availability’ of works, names and nomenclatural acts, there may be no disadvantage in using prepublications. But there is such a disadvantage in nomenclature, and therefore publications that include nomenclatural information should be treated differently. Prepublications are not necessary and useful in taxonomy and should be abandoned in this domain. Taxonomists should be prudent not to be pushed into these problems by outsiders of the field. The journals that are not ready to make this difference and to follow the requirements of taxonomists should be abandoned by the latter. We do not need ‘ad hoc’ solutions like an imaginary ‘version of record’ that would in fact cover several distinct versions in order to cope with artificial problems created by an ill-devised publication policy. As there is clearly no advantage for taxonomy in the use of prepublications, they should not be used in our discipline and the Code should not be modified accordingly. There should exist only one version of taxonomic papers, that is all.

Unfortunately, even if it is recognized that Article 9.9 does indeed refuse availability to ‘early views’ that differ from the final version of a work even by ‘details’ like the pagination, this will not solve completely the problems raised by the publication of such ‘early views’ of taxonomic papers since 2012. The vast majority

of zoologists only download the ‘early views’ of papers, when they exist, as soon as their publication is announced—especially those dealing with the taxonomic groups on which they are working. Furthermore, many colleagues tend to distribute their works to colleagues as soon as these are released online, therefore as ‘early views’ for the journals that do publish them. When it comes to citing these works, many authors will often fail to go back to the site of the journal to download the ‘final version’. Therefore more and more works will tend to be cited in their ‘early view’ versions, and ‘real’ references of these works may tend to become rarer in bibliographies. But if a researcher later develops interest to a subject, he/she will download the ‘final’ version as it will be the only one accessible on the publisher’s website. Therefore there will progressively exist two groups of references for each of these articles—thus leading some authors in the more or less remote future to question whether they refer to the same work or not.

A short-term solution to this problem would be that, from now on, taxonomists decide to ‘boycott’, at least for the publication of their papers having nomenclatural implications, the journals that practice this two-shot publishing system. This might help the publishers of these journals to understand that they are on the wrong track and to change their practices.

In conclusion, we consider that under NISO’s terminology, the paginated document should be considered the VoR of the publication, and the unpaginated as an anterior version, unavailable in nomenclature for not having been ‘*issued for the purpose of providing a public and permanent scientific record*’. This version could not be referred to the NISO category of Proof, and would deserve to be recognized as a distinct category that could be called ‘Preliminary Online Version’ (POV). This category would include both unedited versions of the manuscripts in Word format made available online by some journals (see examples in Dubois et al., 2013) as well as formatted versions still unpaginated and unreferred to an issue of the journal as discussed above. In one situation however, the formatted but still unpaginated version could be the VoR: if this online version, duly registered and archived in order to comply with the 2012 criteria of availability of online publications, remained the only one available on the publisher’s website. If later a paginated version was published on paper, this second version would be an EVoR. However, we are not aware that any journal so far has adopted this publication policy.

Distinct versions of paper publications

In paper publications, any ‘version’ of a work (e.g. ‘second’ edition, ‘revised edition’, etc.) has to be considered a different publication. This applies in particular to ‘preprints’ of works, ‘unambiguously imprinted with their own date of publication’, as stated in Article 21.8.2 of the 2012 Amendment. It is important to note the fact that ‘preprints’ and ‘final prints’, if they bear different dates, are always to be considered as distinct publications, even if their content is the same. This is because, in the meaning of the Code, a publication is not only a content, but also a material object, and if any characteristic of this object (such as its date, issue number, pagination) changes it becomes a different publication. This important distinction seems to be difficult to understand by some activists in favour of e-publications, who do not care for the format and layout but consider that a publication is an immaterial document having only a ‘content’, whether in one format or another.

Inclusion of a text first released as an autonomous work into a Volume, e.g. in a periodical, with a different pagination and other possible changes, results in a different publication, whether or not changes were brought into ‘details’ like the spellings of names. This distinction also applies to most ‘reprints’. Reprints may contain errors, misprints or voluntary changes, e.g. so-called ‘corrections’ of the spellings of names. Except in the case when a work is reprinted exactly identically, through usage either of the same printing plates or of a procedure or technique, such as photocopy or scanning, allowing to produce a strict facsimile, ‘reprints’ are different works whenever they result from a new typesetting, sometimes with different formats, different printing fonts, etc. Even when the greatest care is taken not to introduce changes, it is always possible for a small printing mistake to creep into a reprint not being a strict facsimile obtained without going through a new stage of typesetting. When such an error concerns the spelling of a name, it has nomenclatural consequences. Examples of misprints in the spellings of names that have been introduced, certainly unintentionally, in reprints of taxonomic works, are the name *Trichechus* in the 1894 reprint of Linnaeus (1758) (see Dubois, 2010, p. 19) and the names *Cincinnurus*, *Rallus* and *Thryothorus* in the 1883 reprint of Vieillot (1816) (see David & Dubois, 2011).

This rationale, which has been consistently used for paper-printed works, should be applied in the same way to electronic publications. The mere fact that changes have been brought to the pagination or metadata mentioned in a work is evidence that the document has been modified, and that the possibility therefore exists that other changes have been brought to other parts of the content. Such changes may be voluntary, such as the ‘corrections’ in the spellings of names mentioned by Dubois et al. (2015), but even when they are not, as soon as a document is modified, be it only in its page numbers, such surreptitious changes can occur. No confidence in this respect can be put in the publishers who practice ‘early view’, because, as reminded above, they use the same digital object identifier (DOI) for the ‘early view’ and the ‘final version’, thus showing that they do not attach any importance to these questions. Taxonomists have enough work to do, and are not enough in number considering the huge task in front of them to inventory the vanishing species of our planet, not to have to lose their time comparing two documents line by line and word by word in order to ascertain that their contents are strictly identical.

Some journals indeed mention on their websites that the first versions of the papers they publish are ‘early views’: in such cases there is no doubt that these early views are unavailable preliminary publications, even when they are strictly identical to the final ones. But such information is not provided by other journals. To avoid this problem, it is necessary that all metadata concerning the history of a publication and its different versions be noted in the document itself and do not have to be searched from external sources. Anyway, for taxonomic use can be considered ‘published’ only the version(s) that remain(s) permanently and publicly accessible, in order to comply with the requirement of ‘public and permanent scientific record’.

ZooBank

For the same reasons, as stated by Dubois et al. (2013, 2015), in our opinion, no subsequent change should be allowed in the information already entered in a ZooBank file, because this would open the door to innumerable manipulations.

There should not only exist a single version of each paper released by a publisher, but also a single ZooBank record, entered *before* the publication of this version, fixed, protected and unable to be modified or completed subsequently. In the rare cases of ‘acceptable errors’ as described in Article 8.5.3.3 of the 2012 Amendment, the fact that the file has been modified should be duly mentioned in the file itself, with details on the changes effected, their date and who was responsible for them. The date of such changes is important, because of course taxonomists who would have used this record before the change could not be aware of it, and this may have had consequences in their nomenclatural work. If new versions of a paper are released, they should have their own ZooBank reference to allow the follow-up of the different avatars of a work by users.

Grey zone

We agree with Krell that zoological nomenclature has entered a kind of ‘grey zone’ with the publication of the 2012 Amendment. Before this publication, it was clear that new names and nomenclatural acts published only online were unavailable. After that date, they *may* be available, but there are a number of conditions to be met for this availability to be obtained. Furthermore, for the first time in the history of zoological nomenclature, checking that some of these conditions are complied with relies on information which is external to the publications where the names and nomenclatural acts are published, which is a source of confusions and problems (Dubois et al., 2013, 2015). We still think that the promulgation of the 2012 Amendment was too early and that the strong advice of some authors not to allow electronic publication for new names and nomenclatural acts (see references in Dubois et al., 2013, p. 6) was justified. The existence of online publications was too recent, not enough experience of the situations and problems had been accumulated, and many of the problems to come had not yet been anticipated. By hurrying to publish this Amendment to comply with the request of some publishers (but not of the community of taxonomists, most of whom were probably happy to publish in traditional journals having also an online version but still published on paper like *Zootaxa*), the Commission has opened a Pandora’s box which will be difficult to close. It is noteworthy that this Amendment was adopted by a majority of the Commission’s members but not unanimously, although, given the importance of this Amendment for the future of zoological nomenclature, unanimity would have appeared to be a reasonable condition for its adoption.

Be it as it may, this Amendment is now part of the Code, and for the zoologists who wish to respect the Code and to comply with it in their publications, it should be followed, until a new Amendment replaces it, or a new edition of the Code published. But we think that, like all provisions of the Code, it must be strictly followed, not interpreted in the light of its supposed ‘spirit’ or ‘intentions’. A juridical text like the Code does not include intentions, but Rules. If some of these Rules are unclear, then they must be improved, but until this is done the greatest efforts should be made to follow the Rules strictly, without phantasms and embellishments. Encouraging the non-respect of this Amendment, e.g. in ignoring its Article 9.9, is not doing a service to the community of taxonomists. It amounts to saying that, only a few months after its implementation, this Amendment was already obsolete. This

cannot be an encouragement for authors, editors and publishers to respect and follow this Amendment or the rest of the Code.

Krell (2015, p. 30) advocates a more ‘permissive’ approach to rules of nomenclature. He writes: ‘In this transitional period, we should interpret the existing rules rather pragmatically and liberally’. We do not think this is good advice at a time when there is already a strong tendency in the community of authors of papers having taxonomic content, some of whom are in fact not taxonomists but ecologists, phylogeneticists or geneticists, to deliberately ignore or circumvent the Rules of the Code, or to ‘interpret’ them in such a way that they are no longer Rules, but mere ‘advice’ that one is free to follow or not, thus increasing nomenclatural chaos, confusion and miscommunication.

Krell tends to express ‘confidence’ in the publishers and editors to follow the Rules, but this interpretation is not borne out by the facts. As documented by many examples (see Dubois, 2003, p. 515; 2011, p. 10), more and more authors, editors and journals tend to ignore some basic Rules of the Code, not to say the basic functioning of zoological nomenclature. When famous and ‘respected’ journals like *Science* (e.g. Bossuyt & Milinkovitch, 2001), the *Zoological Journal of the Linnean Society* (e.g. Emerson & Ward, 1998) or *Molecular Phylogenetics & Evolution* (e.g. Vieites et al., 2011) publish nomina nuda, we think that the situation is preoccupying. The same is true when an editorial of *Nature* (Anonymous, 2013) makes fun of ‘the code’s requirement that species descriptions must be always “available”’, thus demonstrating a full misunderstanding of the meaning of this term in the Code, or when *Science* publishes comments on the nomenclatural concept of ‘type’ that simply highlight the fact that their author has no idea of the function of a name-bearing specimen, which is nomenclatural and not taxonomic: ‘The traditional system groups organisms in part according to their resemblance to a representative ‘type’ specimen (. . .). Under the traditional system, a taxonomist (. . .) selects the most representative species to be the ‘type’ for each genus, then the most representative genus to be the type of the family, and so forth. (. . .) as new specimens with similar characteristics are found, they are deemed part of a known species, a new species, or even a new genus based on how closely they resemble the type specimen.’ (Pennisi, 2001, p. 2304). A recent worrying example is the publication in the journal *Systematic Entomology* of a paper (Al khatib [sic] et al., 2014) which failed to provide some basic information indispensable for the nomenclatural availability of 11 new species names, this information being relegated to a Word document attached to the paper as an online ‘Supplementary Information’ (see Al Khatib [sic] et al., 2015), despite the clear warning against this practice given by Dubois et al. (2013). This latter case is particularly worthy of attention, as the first author of Cranston et al. (2015)’s paper, as well as several of the ‘systematists and editors’, supposedly competent in zoological nomenclature, highlighted in this paper as having ‘reviewed and endorsed’ its recommendations regarding ‘metadata’ and ‘versions of record’, are editors of *Systematic Entomology*. . .

Encouraging the community to ‘interpret the existing rules rather pragmatically and liberally’ would only increase this strong trend towards ‘deregulation’ of zoological nomenclature, and it can be predicted that if this lax attitude towards the Rules was supported there would be no turning back. Already now, many papers are published online which contain new names and nomenclatural acts but which do not comply with the 2012 Amendment (see e.g. Chaabane et al., 2015). If we continue to

encourage such practices, some members of the community will consider this as a green light for doing whatever comes into their mind.

Cranston et al.'s (2015) claims in favour of 'metadata' and 'versions of record' were supported by various editors and taxonomists but also by administrative editors and publication managers who are not scientifically concerned by nomenclatural issues. It is true that these people are involved in the process of publication of taxonomic papers, but this also applies to printers, website managers, computer manufacturers or paper producers, so why not invite them also to give their advice on nomenclatural issues? Most publishers of journals and books containing taxonomic novelties or nomenclatural acts are not competent in these domains—and sometimes are proud of it, as shown by the citations above from *Nature* and *Science*. Well-known and wealthy publishers of journals having high impact factors are not 'protected' by these indexes from the risk of publishing fatal nomenclatural flaws. This even applies from time to time to leading taxonomic journals, including the best ones.

Contrary to Krell, we think that as long as we are in the 'grey zone', which may last for years or decades, taxonomists should be particularly attentive to a strict application of the Rules currently in force, including those of the 2012 Amendment, rather than interpreting them or indulging in wishful thinking. It is legitimate and useful for individual zoologists or groups of zoologists to express their opinions about these matters and to provide proposals of new Rules or modifications of the Rules, as we have done ourselves, but none of them should decide personally to implement these proposals in their works. If such practices were encouraged in this particularly difficult period for zoological nomenclature, it would be increasingly difficult or impossible to come back to a respect of the Rules in the taxonomic literature, and nomenclatural chaos and miscommunication would spread even more.

Proposal of a label

In our 2015 paper, we proposed that the journals who wish so might adhere voluntarily to a 'charter' and be given a 'label'. The latter would just state that the adhering publishers and journals agree to respect the following specifications: (1) these journals publish only one 'final' version, bearing a unique DOI, of each of their papers having taxonomic and nomenclatural implications; (2) the label appears on the first or last page of each paper; (3) the record corresponding to this paper in ZooBank, registered before its publication, is not liable to be surreptitiously changed (if changes acceptable under the Code are needed, they will be duly notified in this ZooBank record). This label could be registered, for example by the Commission if it is interested, and its mention would appear in databases dealing with periodicals (such as ZooBank). If the Commission is not interested or willing to care for this label, an independent association could certainly do it.

The label of a periodical or publisher could be withdrawn as soon as a violation of the charter was reported to the body in charge of the label. This would not require being 'voted' upon by any committee or commission. The simple fact, if demonstrated (through the comparison of two PDFs), would be enough. A fixed period (e.g. of 3 years) would then be required before a possible readmission on the list of periodicals bearing the label.

The Code should not be modified to comply with the technical needs of some publishers. All publishers, even the most modest ones, should have the same rights

and obligations, and it is the duty of publishers who wish to publish taxonomic works to take all necessary steps to adapt to the Code, not the reverse.

In the end, the decision on these matters will have to be taken by the Commission when it decides to vote on possible modifications of the Code. But when it comes to vote on these matters, in our opinion, only the members of the Commission who are not involved personally in the publication of taxonomic journals, be it as publishers or as editors, should take part in the vote. Accepting their participation in the vote on this matter, which will have an influence on the publication policies of periodicals and books, would no doubt be a case of ‘conflict of interest’, a problem about which the international scientific community has become more and more conscious and concerned. The Code should be written and adopted by taxonomists and on the basis of the needs of taxonomists alone.

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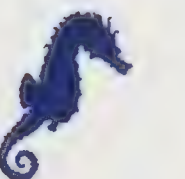
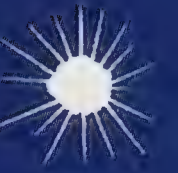
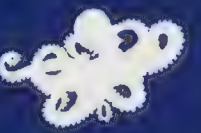
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The Bulletin of Zoological Nomenclature

The Official Periodical
of the International Commission
on Zoological Nomenclature



ICZN

THE BULLETIN OF ZOOLOGICAL NOMENCLATURE

The *Bulletin* is published four times a year for the International Commission on Zoological Nomenclature by the Trustees of the Natural History Museum. The annual subscription for 2016 is £250 or US\$395 or €320, postage included; individual subscribers for personal use are offered a subscription of £125 or US\$195 or €160. All manuscripts, letters and orders should be sent to:

International Commission on Zoological Nomenclature

Natural History Museum

Cromwell Road

London, SW7 5BD, U.K.

(Tel. +44 207 942 5653; e-mail: iczn@nhm.ac.uk)

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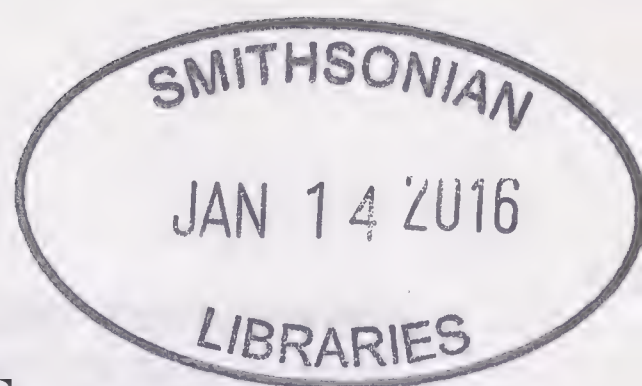
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Cover image: *Octopus vulgaris* Cuvier, [1797] known as the common octopus, Illustrated by Ernst Haeckel in *Kunstformen der Natur*, pl. 54, fig. 4. The names *Octopus* and *Octopus vulgaris* were placed on the Official Lists of Generic and Specific Names in Zoology by rulings in Opinions 233 and 1681. The common octopus is remarkable amongst invertebrates for its spatial learning capacity, navigational abilities, camouflage techniques and use of tools.



BULLETIN OF ZOOLOGICAL NOMENCLATURE

Volume 72, part 4 (pp. 267–344)

20 December 2015

Notices

(1) Applications and correspondence relating to applications to the Commission should be sent to the ICZN at the address given on the inside of the front cover and on the Commission website. English is the official language of the *Bulletin*. Please take careful note of instructions to authors (present in a one or two page form in each Volume and available online (at <http://iczn.org/content/guidelines-case-preparation>) as incorrectly formatted applications will be returned to authors for revision. The Commission's Secretariat will, where possible, answer general nomenclatural (as opposed to purely taxonomic) enquiries and assist with the formulation of applications and, as far as it can, check the main nomenclatural references in applications. Correspondence should preferably be sent by e-mail to 'iczn@nhm.ac.uk'.

(2) The Commission votes on applications eight months after they have been published, although this period is normally extended to enable comments to be submitted. Comments for publication relating to applications (either in support or against, or offering alternative solutions) should be submitted as soon as possible. Comments may be edited (see instructions for submission of comments at <http://iczn.org/content/instructions-comments>).

(3) Requests for help and advice on the Code can be made direct to the Commission and other interested parties via the Internet. Membership of the Commission's Discussion List is free of charge. You can subscribe and find out more about the list at <http://list.afriherp.org/mailman/listinfo/iczn-list>.

(4) The Commission also welcomes the submission of general-interest articles on nomenclatural themes or nomenclatural notes on particular issues. These may deal with taxonomy, but should be mainly nomenclatural in content. Articles and notes should be sent to iczn@nhm.ac.uk.

New applications to the Commission

The following new applications have been received since the last issue of the *Bulletin* (Volume 72, part 3, 30 September 2015) went to press. Under Article 82 of the Code, the prevailing usage of names in the applications is to be maintained until the Commission's rulings on the applications (the Opinions) have been published.

CASE 3699: *Thorectes* Mulsant, 1842 (Insecta, Coleoptera): proposed conservation of usage. M.A. Alonso-Zarazaga, J.M. Lobo, J.I. López-Colón & J.R. Verdú.

CASE 3700: *Diplodocus* Marsh, 1878 (Dinosauria, Sauropoda): proposed designation of *D. carnegii* Hatcher, 1901 as type species. E. Tschoop & O. Mateus.

CASE 3701: *Stenostoma albifrons* Wagler in Spix, 1824 (currently *Epictia albifrons*; Reptilia, Serpentes, LEPTOTYPHLOPIDAE): request for invalidation of a neotype designation under the plenary power. V. Wallach.

CASE 3702: *Verconella dilatata* var. *cuvieriana* Powell, 1927 (currently *Penion cuvierianus*; Mollusca, Gastropoda, BUCCINOIDEA): proposed conservation of the

species-group name. B.A. Marshall, A.G. Beu, W.F. Ponder, H.G. Spencer, K. Walton & R.C. Willan.

CASE 3703: *Nautilus pompilius* Linnaeus, 1758 (Mollusca, Cephalopoda, Nautilida): proposed designation of a neotype. S.V. Nikolaeva, W.B. Saunders, R. Mapes & A.L. Allcock.

CASE 3704: An application for the reversal of Directive 71 (1957) regarding the gender of the name *Lepisma* Linnaeus, 1758 (Zygentoma, LEPISMATIDAE). R. Molero-Baltanás, G.B. Smith, M. Gaju-Ricart, L.F. Mendes & C. Bach de Roca.

CASE 3705: *Mantis limbata* Brullé, 1838 (currently *Ameles limbata*; Mantodea, MANTIDAE, AMELINAE): proposed conservation of the specific name. F. Wieland, J. Goldberg & K. Schütte.

Case 3683

***Cylindrus* Fitzinger, 1833 (Mollusca, Gastropoda, HELICIDAE): proposed conservation**

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Abstract. The purpose of this application, under Article 23.9.3, is to conserve the generic name *Cylindrus* Fitzinger, 1833 for a well-known, monotypic genus with a model species for Alpine endemism in gastropods. This name is threatened by the earlier *Cochlopupa* Jan, 1830, a virtually unused, objective synonym, and by two senior homonyms: the unused *Cylindrus* Batsch, 1789, and *Cylindrus* Deshayes, 1824 which is an unjustified emendation of *Cylinder* Montfort, 1810 and has occasionally been used, though incorrectly applied. Currently *Cylinder* Montfort, 1810 is in use for this taxon, despite being an objective junior synonym of *Cylindrus* Batsch, 1789. It is proposed that the names *Cylindrus* and *Cylinder* be conserved in their accustomed sense by the suppression of all usages of the name *Cylindrus* before that of Fitzinger, 1833, and of *Cylinder* before that of Montfort, 1810.

Keywords. Nomenclature; taxonomy; Mollusca; Gastropoda; HELICIDAE; CONIDAE; *Cylindrus obtusus*; Recent.

1. Batsch (1789, p. 692) validly established the generic name *Cylindrus* for a group of species of cone shells, without including nominal species; his publication was neglected by later authors except Dubois & Bour (2010). This fact resulted in instability with regard to the nomenclature of an iconic, high-alpine land snail, currently known as *Cylindrus* Fitzinger, 1833, and of a taxon of well-known cone snails, for which *Cylinder* Montfort, 1810 is in use.

2. Dubois & Bour (2010, p. 171), the first authors to deal with Batsch's (1789) publication, designated *Conus textile* Linnaeus, 1758, as the type species of *Cylindrus* Batsch, 1789. As no other species were mentioned, *C. textile* is deemed to be the only originally included species (Article 67.2.2).

3. Montfort (1810, p. 390) introduced the generic name *Cylinder* and designated *Conus textile* Linnaeus, 1758 as its type species.

4. The epithets *Cylinder* and *Cylindrus* refer to a shape which is not uncommon among shells of molluscs and would have been well known to 18th century shell collectors. It is therefore possible that other overlooked usages of these names may exist in addition to Batsch (1789).

5. Deshayes (1824, p. 236) used the spelling *Cylindrus* as an unjustified emendation for *Cylinder* Montfort, 1810, so that *Cylindrus* Deshayes, 1824 is an objective junior synonym of *Cylinder* Montfort, 1810, and cannot be used for a genus-group taxon.

6. *Cochlopupa* Jan, 1830 (p. 5), established for *Helix* (*Cochlostyla*) *obtusa* Férrusac, 1821 [= *Pupa obtusa* Draparnaud, 1805], was cited by Schileyko (2006, p. 1785) as a 'nom. oblit.' in the synonymy of *Cylindrus* Fitzinger, 1833. Earlier Kennard (1942, p. 114) had remarked that *Cylindrus* Fitzinger, 1833 had to be replaced by *Cochlopupa* Jan, 1830 because of the senior homonym *Cylindrus* Deshayes, 1824. However, only one publication after 1899 was found (Schileyko, 2012) in which the name *Cochlopupa* Jan, 1830 was used as valid.

7. Following Dubois & Bour (2010), *Cylindrus* Batsch, 1789, was used as valid by Poppe et al. (2012) but, soon after that, malacologists used *Cylinder* Montfort, 1810 instead, to promote stability regarding *Cylindrus* Fitzinger, 1833. *Cylinder* is currently used with *Conus textile* Linnaeus, 1758 as its type species at generic rank (Bozzetti, 2012; Tucker & Tenorio, 2013; Limpalaër & Monnier, 2013) or as a subgenus (Puillandre et al., 2015; Tucker & Tenorio, 2009; WoRMS, 2015).

8. Schileyko (2006, p. 1785) introduced the tribe CYLINDRUINI based on *Cylindrus* Fitzinger, 1833, next to CYLINDRINAE Thiele, 1929, based on *Cylindra* Schumacher, 1817, and stated (p. 1786) that the Commission had been petitioned to maintain the usual usage of *Cylindrus* Fitzinger, 1833, but this has not yet been done.

9. Bank & Gittenberger (2013, p. 1) and Puillandre et al. (2015, p. 7) independently declared that the Commission should be, or would be, petitioned to maintain the usual usage of *Cylindrus* Fitzinger, 1833, and *Cylinder* Montfort, 1810.

10. The World Register of Marine Species (WoRMS) states (04.08.2015): 'Cylindrus Batsch, 1789 accepted as Cylinder Montfort, 1810 accepted as Conus (Cylinder) Montfort, 1810'.

11. *Cylindrus* Fitzinger, 1833 (p. 107), in the combination *Cylindrus obtusus* (Draparnaud, 1805), has been used in the preceding 50 years (cited chronologically) at least by Backhuys (1969), Klemm (1974), Schütt (1977), Kerney, Cameron & Jungbluth (1983), Pfleger & Chatfield (1988), Kreissl (1989), Fechter & Falkner (1990), Mildner & Kofler (1990), Gittenberger (1991), Freitag (1991), Frank (1992), Sattmann, Kleewein & Baminger (1995), Schileyko (1996), Freitag & Desch (1996), Schileyko, Baminger & Sattmann (1997), Edlinger (1999), Bisenberger et al. (1999), Kleewein, Baumgartner & Sattmann (2000), Schileyko (2006), Frank (2006), Duda et al. (2010), Kruckenhauser et al. (2010a, b), Arthofer, Cadahía & Kruckenhauser (2010), Groenenberg et al. (2012), Neubert (2013), and Cadahía et al. (2014). Earlier in the 20th century, *Cylindrus* Fitzinger, 1833 was also frequently used, as for example by Sturany & Wagner (1914), Geyer (1927), Thiele (1931), Hesse (1931), Adensamer (1937, with many additional references for *Cylindrus obtusus*), Kühnelt (1937), Boettger (1949), Frömming (1954), Ehrmann (1956), Paget (1959), Zilch (1960), Adensamer (1962), and Jaekel (1962). It is suggested that the prevailing usage of the names *Cylinder* Montfort, 1810 and *Cylindrus* Fitzinger, 1833 be maintained by a Commission's ruling.

12. The International Commission on Zoological Nomenclature is accordingly asked:

(1) to use its plenary power to:

(a) suppress all usages of the genus-group name *Cylindrus* before that of

- Fitzinger, 1833 for the purposes of both the Principle of Priority and the Principle of Homonymy;
- (b) suppress all usages of the genus-group name *Cylinder* before that by Montfort, 1810 for the purposes of both the Principle of Priority and the Principle of Homonymy;
 - (c) suppress the genus-group name *Cochlopupa* Jan, 1830 for the purposes of the Principle of Priority but not for those of the Principle of Homonymy;
- (2) to place on the Official Index of Rejected and Invalid Generic Names in Zoology the following names:
- (a) *Cylindrus* Batsch, 1789, as suppressed in (1)(a) above;
 - (b) *Cylindrus* Deshayes, 1824, as suppressed in (1)(b) above;
 - (c) *Cochlopupa* Jan, 1830, as suppressed in (1)(c) above.

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Acknowledgement of receipt of this application was published in BZN 72: 2.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3703***Nautilus pompilius* Linnaeus, 1758 (Mollusca, Cephalopoda, Nautilida): proposed designation of a neotype**

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Abstract. The purpose of this application, under Article 75.5 of the Code, is to set aside all type fixations for *Nautilus pompilius* Linnaeus, 1758, and to designate a neotype. The type series of *N. pompilius* includes specimens in the Linnean Society of London, the University Museum in Uppsala, and specimens figured by pre-Linnaean authors indicated by reference by Linnaeus (1758). The original material includes juveniles, specimens with unknown provenance, modified specimens and carved ornaments. Given the poor quality of the material and the lack of clarity as to its type status, we apply to the Commission asking to set aside all previous type fixations and designate a neotype. The neotype designation is of utmost importance for accurate identification of this species, which is necessary for its trade control and protection.

Keywords. Nomenclature; taxonomy; Nautilida; *Nautilus pompilius*; Ambon; neotype.

1. Linnaeus (1758, p. 709) described the new genus and species *Nautilus pompilius*. In his original description (Fig. 1) he included only references to publications containing illustrations of *N. pompilius*, although it is known that he also dealt with original specimens of this species, as *N. pompilius* shells were present in the collection of molluscs given to the University of Uppsala in 1746, during Linnaeus' time, by

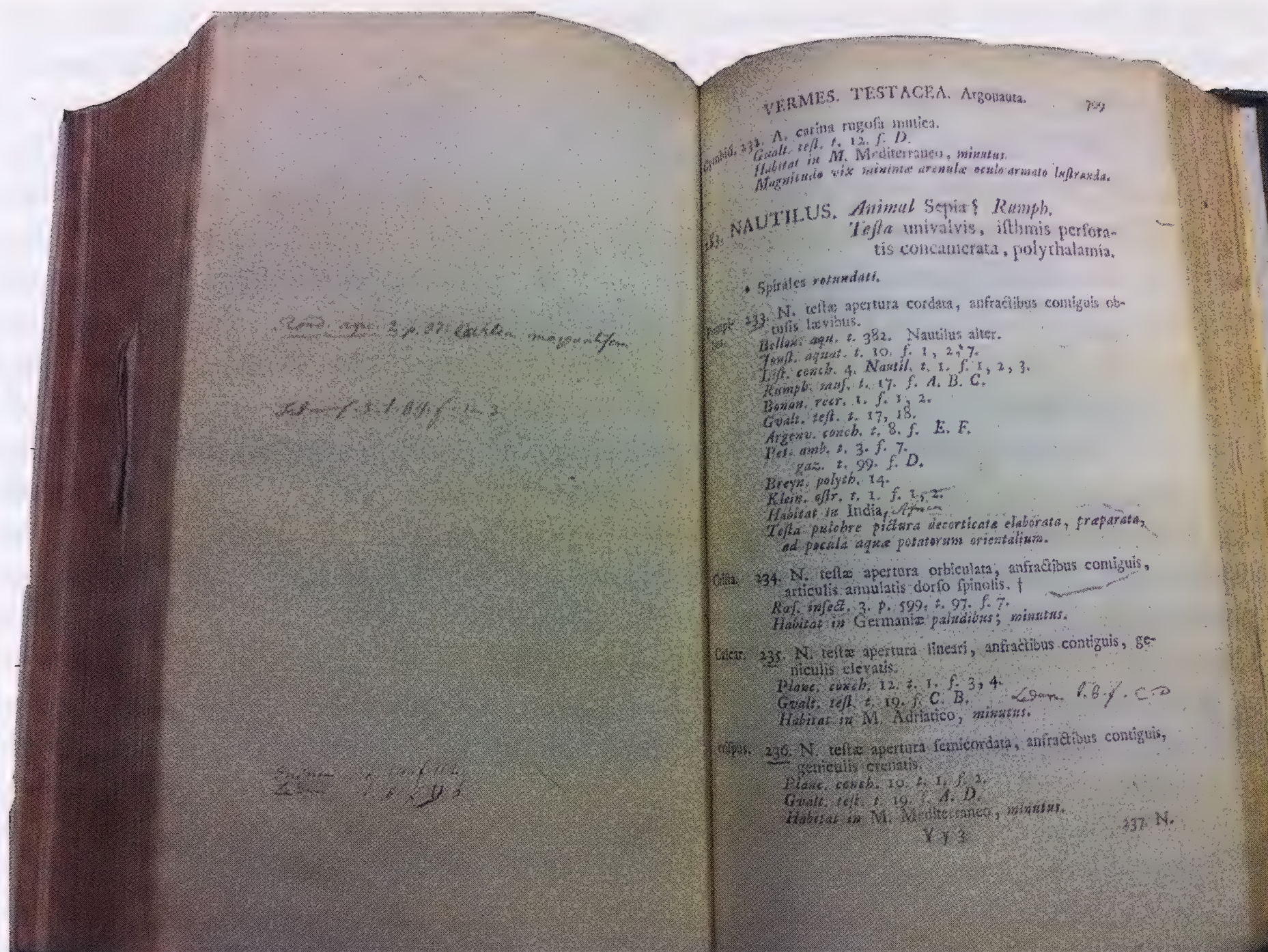


Fig. 1. A photograph of the annotated copy of Linnaeus (1758, p. 709) at the Linnean Society of London. The original description contains no mention of any actual specimens of *Nautilus pompilius*, but contains 10 references to previously published illustrations.

Eric Petreus (Thunberg, 1787, p. 13). It was usual for Linnaeus not to mention in the editions of the *Systema Naturae* whether there were actual specimens of a species that he had seen or were in his collection (A. Gentry, pers. comm.). According to Article 72.4.1.1 of the Code, the type series consists of all the specimens included by the author in the new nominal taxon at the time of description (whether directly or by bibliographic reference), and any evidence, published or unpublished, may be taken into account to determine what specimens are included. Nikolaeva (2015) studied the type series of *N. pompilius*, but was not able to locate with certainty any specimens figured by pre-Linnaean authors and indicated by reference by Linnaeus (1758), and some pre-Linnaean illustrations referenced by him were shown to be artistic impressions or copies of earlier images. One possible syntype is housed in the Linnean Society of London (see para 12). Possible type specimens could also survive in three Italian institutes, the Museo di Storia Naturale e del Territorio of the Università di Pisa, the Museo di Storia Naturale di Firenze and the Palazzo Pitti in Florence, as well as in some other museums elsewhere. All specimens figured by pre-Linnaean authors indicated by reference by Linnaeus (1758) are also part of the type series. To our knowledge none of the surviving specimens has been formally designated as lectotype, although some of the specimens illustrated by authors cited by Linnaeus have been designated as lectotypes. The bibliographical references and information about the specimens known to Linnaeus of this species are briefly summarized below (see Nikolaeva, 2015, for details).

2. Belon (1553, p. 382, unnumbered figure). The specimen figured by Belon as '*Nautilus alter*', is a partly broken adult shell showing chambers, septa and siphuncle; the shell is believed to be lost.

3. Jonston (1650, pp. 39, 40, pl. X, figs. 3–4, not 1, 2, 7 = *Argonauta*). The provenance and whereabouts of these specimens figured as '*Nautilus*' are not known, but it was confirmed that the figures are not copied from Aldrovandi (1606 and 1623).

4. Lister (1688, Volume IV, pl. 550, figs. 1, 3; pl. 551, fig. 3a). The whereabouts of the figured specimens (pl. 551, fig. 3a, unnamed and pl. 550, figs. 1, 3 figured as '*Nautilus caudatus*') is unknown, although many of the other shells illustrated in Lister's Volumes came from Sir Hans Sloane's shell collections. A recent search of Sloane's shell collections in the Natural History Museum (London) (March 2015) has revealed three cephalopod specimens (two etched *Nautilus* shells and one *Argonauta* shell). These shells are not recorded in Wilkins' (1957) catalogue of Sloane's specimens, nor do any of them resemble Lister's figures. For the publication dates of Lister's Volume and plates see Wilkins (1957) and Roos (2012).

5. Rumphius (1705, pl. 17, figs. A, B, C). Rumphius (1705, p. 59) was the first to describe *Nautilus pompilius* (as '*Nautilus major, sive crassus*'), and illustrations included in his *D'Amboinsche Rariteitkamer* were known to prominent zoologists of the 18th and 19th century (Davis, 2010). Linnaeus cited three illustrations of *Nautilus* as they appear in Georg Eberhard Rumphius' *D'Amboinsche Rariteitkamer* (1705, pl. 17). The same illustrations were reprinted in 1740 and 1741 editions of *D'Amboinsche Rariteitkamer* (Rumphius, 1740, 1741) and in *Thesaurus Imaginum* (Rumphius, 1711, 1739). The plate includes images of three different specimens illustrated by Maria Sibylla Merian and Pieter de Ruijter, and the whereabouts of all of these is unknown (Beekman, 1999; Nikolaeva, 2015). Comparison of the original wash drawings showed that plate 17 in the *D'Amboinsche Rariteitkamer* is a combination of illustrations of three specimens, two of which were shells, and one was a preserved soft body (Nikolaeva, 2015). House (1987, p. 57) designated all three figures as types and 'holographs', which can be interpreted as a lectotype designation under Article 74.6 of the Code (Fixation of lectotype by inference of 'holotype' or 'the type' before 2000) of this species, evidently believing that they depict one specimen. However, this designation is invalid because it included more than one specimen. Most of Rumphius' original material was destroyed in a fire in 1687 (Strack, 1993; Strack & Goud, 1996). Some Rumphian specimens were bought prior to that, in 1682, by Grand-Duke of Tuscany Cosimo III de' Medici, and were later transferred to the Museo di Fisica e Storia Naturale di Firenze (Florence). The specimens were later mixed, and the original labels were destroyed; the new labels did not indicate the collector, the date, or the place of collection. In 2014 staff of the Florence Museum confirmed that no Rumphian specimens of *Nautilus* were present in the collection (Cecilia Volpi & Luca Bartolozzi, pers. comm.). Godée Molsbergen (1931) suggested that some shells incorporated in a decorative mosaic table at the Palazzo Pitti in Florence were from Rumphius' collection (possibly types).

6. Buonanni (1684, figs. 1 and 2). The figures (referred to in the index as '*Nautilus*') were almost definitely copied from the original etching by Wenceslaus Hollar (Pennington, 1982). The whereabouts of Hollar's specimen is unknown.

7. Gualtieri (1742, pls. 17–18). It is believed that Gualtieri had in his possession some duplicates (? Linnaeus' future syntypes) from Rumphius and that these might

have been depicted in his 1742 book as '*Nautilus*' (Martelli, 1903; van Benthem Jutting, 1959; Dijkstra, 1997; Strack, 1993; Strack & Goud, 1996; Manganelli & Benocci, 2011). Gualtieri's collection is housed in the Museo di Storia Naturale e del Territorio of Pisa University (Coomans, 1992; Dijkstra, 1997, 1999; Sabatini, 2009). Only one *Nautilus* shell is currently present in this collection (Marco Dellacasa, pers. comm.). This is a polished shell with 29 visible phragmocone chambers, and it could be a specimen figured by Gualtieri in Fig. 4 of *Index testarum*, 1742. However, this is not a specimen figured in Rumphius' volume and hence not one of Linnaeus' syntypes, as Linnaeus did not refer to Gualtieri's Fig. 4.

8. Dezallier d'Argenville (1742, pl. 8, figs. E, F). The figured shells of 'Nautilles' came from the cabinet of curiosities of Joseph Bonnier de la Mosson (1702–1744) (Bleichmar, 2012, p. 101). The name of Bonnier de la Mosson is identified at the bottom of Plate 8, which shows six shells from the collection, and one *Nautilus* shell is shown from two sides at the very bottom of the page. These specimens are believed to be lost.

9. Petiver (1713, pl. 3, fig. 7). The illustration (referred to as '*Nautilus major, sive crassus*') is a copy of Merian's drawing used in Rumphius (1705), see para. 5.

10. Breyne (1732, pp. 14–15, pl. 1). This is a sectioned specimen (referred to as '*Nautilus alter*'), with 25 chambers, probably from the Danzig (Gdansk) collection. Breyne gave a list of synonyms ('*N. caudatus*', '*N. magnus*', '*N. fasciatus*', and '*N. major, sive crassus*'). The whereabouts of this specimen is unknown.

11. Klein (1753, pl. 1, figs. 1 and 2). These are views of a small shell, with normal nautiloid ornamentation, intact aperture and the umbilicus not covered by callus (referred to as '*Nautilus major crassus*'). The specimen was most likely from Klein's own curiosity cabinet and is believed to be lost.

12. Linnaeus' collection at the Linnean Society of London has one specimen of *Nautilus pompilius*. It is catalogued and has a partly printed and partly handwritten label signed by S.P. Dance in 1963. The label refers to the original reference in Linnaeus (1758) and a reference to subsequent sources, i.e. Linnaeus (1767), Hanley (1855) and Dodge (1953). Linnaeus (1758) did not mention any actual specimens of *N. pompilius*, while Linnaeus (1764, p. 549; 1767, p. 1161) mentioned specimen no. 149 (now specimen no. 880 in the Uppsala Museum). The specimen in the Linnean Society represents a young individual of ca. 5 cm in diameter with an open umbilicus and a filed (cut and polished) aperture. The filed aperture was mentioned by Dance (1967) and he cited this specimen as one that had been isolated by Hanley (1855), probably the same species as one figured by Martini (1769), although the umbilicus in the young specimen in the Linnean collection is open, while in Martini's specimen it is covered by black callus. However, no mention of the specimen now in the Linnean Society can be found in Linnaeus (1758, 1767) or Gmelin (1791). It is possible that this specimen was part of the type series, but because it is a young shell with an open umbilicus and its aperture is filed, it is not a suitable candidate for lectotype designation.

13. Only Linnaeus' own specimens came to London, and not those that had belonged to King Adolf Fredrik and Queen Louisa Ulrika of Sweden, those in the Royal Academy in Stockholm, or those contained in a series of donations given to the Uppsala Museum during Linnaeus' time (Targioni Tozzetti, 1890, p. 25; Smith, 1832, pp. 111–114; Myrin, 1833, pp. 238–262; Jackson, 1890, p. 25; Löwegren, 1952,

pp. 234–236). Four specimens of *N. pompilius* in the Uppsala University Museum (Wallin, 2001) appear to be original Linnaean syntypes. Two Uppsala specimens are subadult shells, and another is decorated by etching and has been broken. The remaining Uppsala specimen is an adult *Nautilus*, but it is not certain whether Linnaeus saw it prior to 1758. Specimen no. 87 (a decorated shell) was in the collection of molluscs given to the University of Uppsala in 1746, during Linnaeus' time, by Eric Petreus (Thunberg, 1787, p. 13). Thunberg (1787) only mentioned one specimen without describing it, but Löwegren (1952, pp. 196–198) and Holm (1957, pp. 33–35) both give descriptions of the Petreus collection and the history of its acquisition. The illustration of this specimen in Holm (1957, text-fig. 3) shows a decorated shell of *N. pompilius* ('Linnean collection No. 87'), presently missing from the Uppsala collection (Erica Mejlön, pers. comm.). According to Holm (1957), after receipt of the large Gustaf Adolf collection, shells of the Petreus collection were treated as duplicates, never described by Linnaeus, and sent to Christiania (now Oslo) in 1825; only one engraved shell (specimen no. 87) was left in Uppsala, figured by Holm (1957, text-fig. 3). This specimen, even if found, would not be suitable for a lectotype designation because it has no periostracum, and is partly broken. No relevant Petreus specimens could be found in the Oslo University Museum, in the collection or on display (Vladimir Gusarov, pers. comm.). Specimen no. 880 is a large shell ca. 18 cm in diameter, with a complete aperture, closed umbilicus and a well-preserved characteristic colour pattern. The specimen was in Queen Louisa Ulrika's collection, listed by Linnaeus (1764, p. 549) under no. 149. Linnaeus (1767, p. 1161) noted that there was material in the collection ('MLU 549, n. 149'). However, this does not mean that the specimen was not present by 1758. In 1798 the collection of the Drottningholm Palace was divided and the dried material (plants and invertebrates) was transferred to the University Museum in Uppsala in 1803 (Thunberg, 1804; Löwegren, 1952, pp. 309–310). It is possible that Linnaeus handled specimen 880 before 1758, but there is no documentary evidence of that. Specimens numbered 1599a and 1599b were also in Gustaf Adolf's collection and it is possible that they were known to Linnaeus before 1758, but there is no documentary evidence of that either. These are two young shells, with almost closed umbilici, although in the smaller specimen (1599b) a remaining small opening can be observed. These two specimens of *N. pompilius* are listed in part 24 of Thunberg's catalogue (1804, p. 5). These specimens have been housed in the Uppsala Museum since 1798. They are also listed by Wallin (2001).

14. Saunders et al. (in prep.) are describing living specimens of *Nautilus pompilius* trapped off Ambon, Molucca Islands (N=44), and from a separate population (N=64), ~1,500 km to the southwest, in the Sumbawa region of Indonesia. The Ambon specimens are from the area where Rumphius lived and wrote *D'Amboinsche Rariteitkamer* (1705), and described the area of occurrence of *Nautilus* as the seas of the Moluccan Islands as well as Batavia and Java. Linnaeus (1758) cited Rumphius' comments on occurrence and his illustrations. Thus, it is logical to interpret Ambon as the type locality for the species, and to use material from this area in selecting a neotype. Indonesian *Nautilus* may differ at the subspecies level and perhaps at the species level from that of documented living populations in the Philippines, Palau, Papua New Guinea, New Caledonia, American Samoa, Vanuatu, Australia and elsewhere. These relationships are still being worked out, pending genetic investigations (Wray et al.,

1995; Sinclair et al., 2007, 2011; Bonacum et al., 2011; Williams et al., 2012). Suitable and well documented live caught specimens (shells and soft parts) as well as topotype reference material from Ambon have been deposited at the Smithsonian Institution, Washington DC (USNM 816877 [AMB 16], proposed neotype) and at the American Museum of Natural History, NY (AMNH 79686 [AMB 5]; AMNH 79685 [AMB 12] and AMNH 79696 [AMB 8]). In 1987, shells and soft-parts were also deposited with the Indonesian Institute of Sciences (LIPI), Institute of Oceanography, in Ambon, and at the Biology Laboratory, University of Pattimura, Poka Campus, Ambon. The material from the Sumbawa region, Indonesia was deposited at Hasanuddin University, Department of Fisheries in Makassar, Sulawesi Island, Indonesia. The Sumbawa material cannot leave the country because *Nautilus* shells are on the Indonesian Endangered Species list and cannot be shipped out of the country unless they are 'objets d'art'. However, morphometric data on the 64 Sumbawa specimens are available and tissue samples collected in the field have been processed for DNA and are being reported by Saunders et al. (in prep.).

15. Four additional subspecies of *Nautilus pompilius* have been described. Three (*N. pompilius moretoni*, *N. pompilius marginalis* and *N. pompilius perforatus*) were described by Willey (1897) from Papua New Guinea; no type material has been located for these subspecies, and because of the potential for substantial drift of empty dead shells, their actual geographic origin is uncertain. They were all considered variants of *N. pompilius*, and as species dubia by Saunders (2009). A fourth described subspecies, *N. pompilius suluensis* Habe & Okutani, 1988, was described from Tubbataha Reef, the Sulu Sea, near Palawan (Parawan) Island in the Philippines. The holotype is deposited in the National Science Museum Tokyo (NSMT Mo-64608) and presumed topotypes are figured by Saunders (2009, figs. 3c, d). Although soft parts and genetic data for this subspecies are unknown, this taxon probably merits species rank (see below). Molecular studies have shown Indonesian material to be different at the subspecies level and probably at the species level from material from Papua New Guinea, Northeast Australia, the Coral Sea, Fiji, Vanuatu and American Samoa (Sinclair et al., 2007, 2011; Bonacum et al., 2011; Williams et al., 2012). Mitochondrial genes have shown clear separation between material from six general locations: (1) Fiji, (2) Vanuatu, (3) American Samoa, (4) Coral Sea Islands (including Osprey Reef, Shark Reef and Bougainville Reef), (5) Papua New Guinea and the Great Barrier Reef (including Port Moresby, Admiralty Islands, Mantis Reef, Wishbone Reef, Carter Reef) and (6) Indonesia, Western Australia, Philippines and Palau (Sinclair et al., 2007, 2011; Bonacum et al., 2011; Williams et al., 2012). Using approximate Bayesian Computation analysis, it has further been shown that the apparent lack of genetic divergence between Western Australia and Philippine populations is because of limited genetic drift in these isolated populations since their separation rather than gene exchange (Williams et al., 2015), potentially supporting the Philippines as separate from an Indonesia/Western Australia clade.

16. According to Article 75.5 of the Code, replacement of unidentifiable name-bearing types with a neotype requires an application to the International Commission on Zoological Nomenclature. An identifiable type specimen is necessary to correctly identify the species in order to estimate the demographic parameters and geographical range of this species, to stabilize the nomenclature and thus allow the description of other species from Australia and the IndoWest Pacific, and to define sustainable

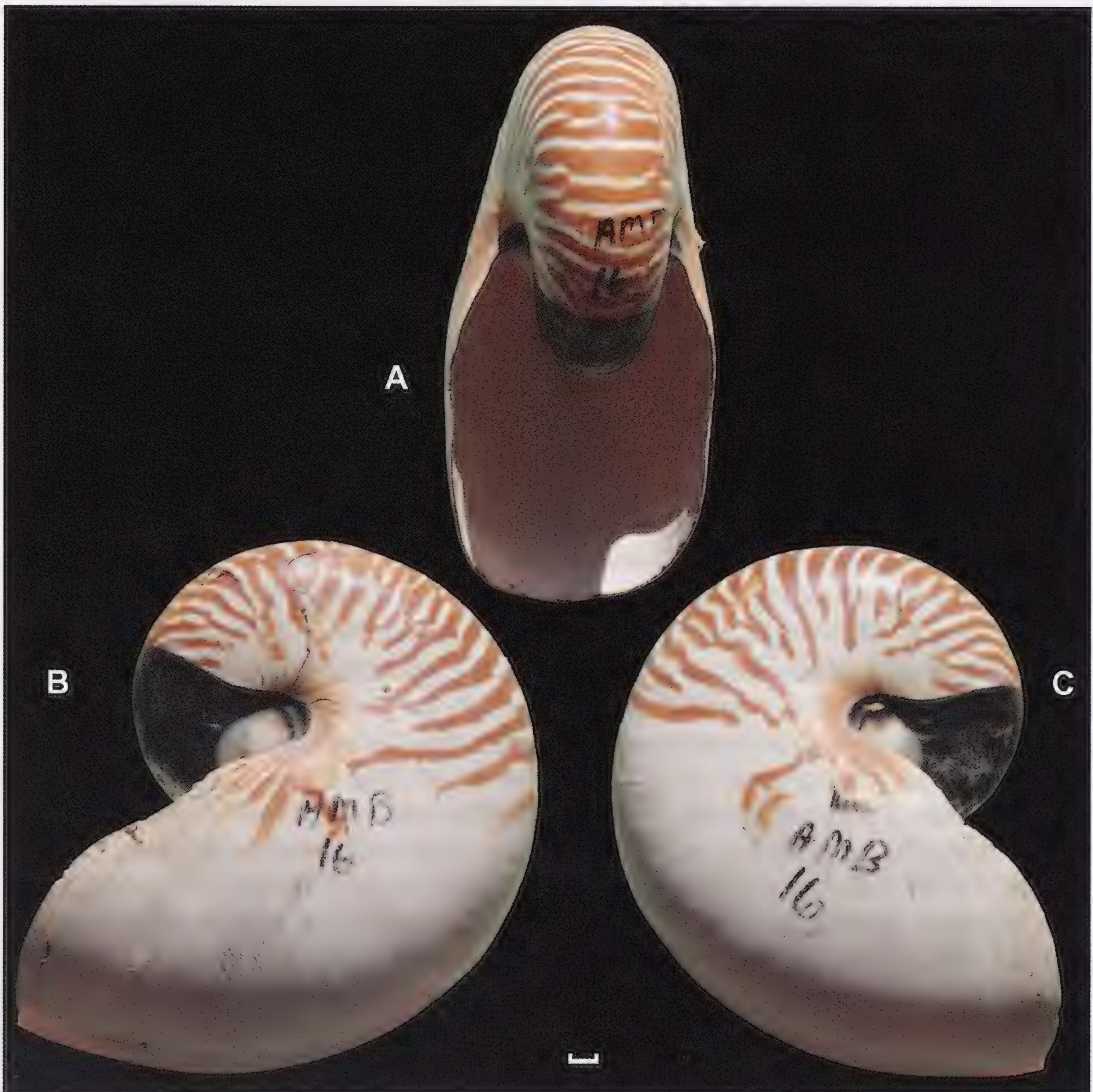


Fig. 2. Proposed neotype of *Nautilus pompilius* Linnaeus, 1758 (USNM 816877 [AMB 16]) from Ambon, deposited at the Smithsonian Institution, Washington DC; (A) apertural view, (B, C) lateral views. Scale bar 10 mm.

catch levels and conservation protocols for species within this genus. The neotype designation is urgently needed for the IUCN red list assessments for *N. pompilius*, which are very difficult in the absence of an identifiable type specimen with known provenance, as well as for trade regulations for this species by the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) (De Angelis, 2012). This situation certainly meets conditions of Article 75.3.1 of the Code (a neotype is validly designated when there is an exceptional need and only when that need is stated expressly).

17. We propose specimen USNM 816877 [AMB 16] (Fig. 2) housed in the Smithsonian Institution's collections to be the neotype and for which we also have DNA and preserved soft tissues in isopropyl alcohol. The soft tissue of USNM 816877 is in the USNM alcoholic collections which are stored separately and it (the tissue) has the same number as the shell. The qualifying conditions of Article 75.3 of

the Code are met. Molecular sequence data from this specimen for 412 bases of the mitochondrial cytochrome oxidase I (COI) gene, and 398 bases of the mitochondrial large ribosomal subunit (16S rRNA) gene are published in Genbank under accession numbers KC539924 and KC539895 respectively. The molecular sequence data, as well as the colour pattern and shell and soft body morphology, of the proposed neotype, will differentiate the nominal species-group taxon from other taxa (as per Article 75.3.2 of the Code). The available data and description are sufficient to ensure recognition of the specimen designated (as per Article 75.3.3 of the Code). The proposed neotype is consistent with what is known on the shell pattern and morphology of the syntypes and from other sources and agree with the prevailing usage (as per Article 75.3.5 of the Code). The proposed neotype specimen was recovered from traps set on the bottom at ~300 m depth by W.B. Saunders and L.C. Hastie on 1 August 1987. The Ambon trap site is located ~6 km southwest of Ambon City, Ambon Island, Molucca Islands (Maluku Province), just off the small coastal village of Eri, hence the proposed neotype came as nearly as practicable from the original type locality (Article 75.3.6 of the Code). Specimen USNM 816877 [AMB 16] (Fig. 2) is housed in the Smithsonian Institution and is accessible for study (Article 75.3.7 of the Code).

18. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all previous type fixations for the name *pompilius* Linnaeus, 1758, as published in the binomen *Nautilus pompilius*, and to designate as neotype specimen USNM 816877 (AMB 16), as specified in para. 17 above;
- (2) to place on the Official List of Species Names in Zoology the name *pompilius* Linnaeus, 1758, as published in the binomen *Nautilus pompilius* Linnaeus, 1758 and as defined by the neotype designated in (1) above.

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Acknowledgement of receipt of this application was published in BZN 72: 268.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to the Executive Secretary, I.C.Z.N., c/o Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3694

***Pomachilius variegatus* Schwarz, 1904 (Insecta, Coleoptera, ELATERIDAE): proposed conservation of the specific name by suppression of the name *Aeolus variegatus* Curtis, 1839**

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Abstract. The purpose of this application, under Articles 23.9.3 and 81 of the Code, is to conserve the specific name *Pomachilius variegatus* Schwarz, 1904 (Insecta, Coleoptera, ELATERIDAE) by suppression of the name *Aeolus variegatus* Curtis, 1839 a senior secondary homonym, and a subjective junior synonym of *Pomachilius subfasciatus* (Germar, 1824). Stability of taxonomy and nomenclature would best be served by suppressing the senior homonym.

Keywords. Nomenclature; taxonomy; Coleoptera; ELATERIDAE; *Aeolus variegatus*; *Pomachilius variegatus*; *Pomachilius subfasciatus*; click beetle; Neotropical.

1. Homonymy exists between the species-group names *Aeolus variegatus* Curtis (1839, p. 197) (Insecta, Coleoptera, ELATERIDAE) and *Pomachilius variegatus* Schwarz (1904, p. 76) (Insecta, Coleoptera, ELATERIDAE). The publication history was discussed in detail by Johnson (2015).

2. The senior name was overlooked by Candèze (1860, 1891), being cited as a valid name before 1899 only by Gemminger & Harold (1869). After 1899, *Aeolus variegatus* Curtis was catalogued as a valid name by Schenkling (1925) and Blackwelder (1944) in *Aeolus* Eschscholtz, 1829. The name was confused with *Aeolus variegatus* Schwarz (1902, p. 145) by Schenkling (1925) and this confusion was repeated by Blackwelder (1944). *Aeolus variegatus* Curtis has no other identifiable record in the post-1899 scientific literature until now.

3. *Pomachilius variegatus* Schwarz (1904) was treated as a valid name by Schwarz (1906), Schenkling (1925), Blackwelder (1957), Gaedike (1985) and Johnson (2015).

4. Johnson (2015) determined that *Aeolus variegatus* Curtis, 1839 is a junior subjective synonym of *Elater subfasciatus* Germar, 1824 (p. 50), currently as *Pomachilius subfasciatus* (Germar, 1824), and this combination was used in the six instances above. This synonymy resulted in removing the homonymy between *Aeolus variegatus* Curtis and *Aeolus variegatus* Schwarz, and brought *Aeolus variegatus* Curtis into senior secondary homonymy with *Pomachilius variegatus* Schwarz.

5. The conditions of Article 23.9.1 cannot be met for the purpose of conserving the use of *Aeolus variegatus* Curtis, hence actions based on Article 23.9.2 are not possible.

6. Conserving the name *Pomachilius variegatus* Schwarz, 1904 which has no junior synonyms, is not expected to be problematic as the name though used only six times (see above) is more frequent than its senior homonym that was used only once before and three times (see above) after 1899 and is also now a junior subjective synonym

of *Pomachilius fasciatus* (Germar, 1824). The greater confusion would come from retaining *Aeolus variegatus* Curtis, 1839, a largely unused name.

7. The International Commission on Zoological Nomenclature is accordingly asked:
- (1) to use its plenary power to suppress the name *variegatus* Curtis, 1839, as published in binomen *Aeolus variegatus*, for the purposes of both the Principle of Priority and the Principle of Homonymy;
 - (2) to place on the Official List of Specific Names in Zoology the name *variegatus* Schwarz, 1904, as published in the binomen *Pomachilius variegatus*;
 - (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *variegatus* Curtis, 1839 as published in the binomen *Aeolus variegatus* and as suppressed in (1) above.

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Acknowledgement of receipt of this application was published in BZN 72: 179.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3698***Cicindela varians* Gory, 1833 (currently *Cenothyla varians*; Coleoptera, CARABIDAE): proposed conservation**

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Abstract. The purpose of this application, under Articles 23.9.3 and 81 of the Code, is to conserve the widely used name *Cicindela varians* Gory, 1833 (currently *Cenothyla varians*), a primary junior homonym of *Cicindela varians* Ljungh, 1799, for a species of carabid beetle. The senior homonym has been used only once after 1900, and is a subjective senior synonym of *Cicindela scutellaris* Say, 1823. Suppression of *Cicindela varians* Ljungh, 1799 would also help maintain the usage of the widely used name *Cicindela scutellaris* Say, 1823.

Keywords. Nomenclature; taxonomy; CARABIDAE; *Cenothyla varians*; tiger beetles.

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1. *Cenothyla varians* was originally described as *Cicindela varians* Gory, 1833.
 2. Chaudoir (1843) described *Odontocheila cognata* Chaudoir, 1843, but later (Chaudoir, 1860, p. 321) transferred *Cicindela varians* Gory, 1833 into *Odontocheila* Laporte, 1834 and treated *Odontocheila cognata* as a junior synonym of ‘*Odontochila varians*’ [sic]. This decision was followed by Gemminger & Harold (1868), Fleutiaux (1892), Horn (1895, 1899, 1902, 1904, 1905, 1910, 1926) and other subsequent authors. Rivalier (1969) treated this species as *Cenothyla varians* (Gory, 1833) in his important revision of *Odontocheila*, and Wiesner (1992) also used this name in his checklist.
 3. Cassola (1999) found that *Cicindela varians* Gory, 1833 was a primary homonym of *Cicindela varians* Ljungh, 1799. Consequently, Cassola (1999) replaced *C. varians* Gory with the first available synonym *Odontocheila cognata* Chaudoir, 1843 and treated this taxon as *Cenothyla cognata* (Chaudoir, 1843). This species was listed under this substituted name by some recent authors such as Lorenz (2005) and Erwin & Pearson (2008). Boyd (2000) argued that the several replacements by Cassola (1999) were made contrary to the Code.
 4. The replacement by Cassola (1999) is considered inappropriate for the following reasons:
 - (1) Although *Cicindela varians* Gory, 1833 was a primary junior homonym of *Cicindela varians* Ljungh, 1799, the taxa had not been considered congeneric since 1834;
 - (2) *Cicindela varians* Ljungh, 1799 has been used as a valid name only once since it was originally established. Cassola (1999) attempted to restore it as a senior synonym for the North American species *Cicindela scutellaris* Say, 1823, but this action was rejected by Boyd (2000) and Erwin & Pearson (2008). Under Article 23b of the 1985 Code, which was then in force, an author who considered that the application of the Principle of Priority would disturb

stability or universality or cause confusion was to maintain existing usage and should have referred the case to the Commission for a ruling under Article 79c. Cassola (1999, p. 76), did not follow this protocol and replaced the junior but widely used name by an obscure senior name that had never been in use. Cassola (1999) dealt in detail only with *C. varians* Ljungh, for which his arguments and reasoning were applied. His treatment of *C. varians* Gory was merely an aside without any reference to Code provisions.

- (3) The name *Cicindela varians* Gory, 1833 (as *Odontocheila* or *Cenothyla*, respectively) has been in prevailing (even exclusive) usage for more than a hundred years in taxonomic studies (e.g. Mandl, 1951; Rodriguez, 1994; Pearson et al., 1999; Naviaux, 2002), online databases, and ecological papers (e.g. Addis & Messner, 1997). A non-exhaustive list of 27 examples of usage of the name *variens* Gory 1933 as valid and a list of four examples of usage of the name *variens* Ljungh, 1799 are kept by the Commission Secretariat. Boyd (2000) demonstrated the wide usage of the name *Cicindela scutellaris* Say, 1823. Since the names *Cicindela varians* Gory, 1833 and *Cicindela scutellaris* Say, 1823 are both widely used, their replacement will lead to considerable confusion (Moravec, 2015).

5. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to suppress the name *variens* Ljungh, 1799, as published in the binomen *Cicindela variens*, for the purposes of both the Principle of Priority and the Principle of Homonymy;
- (2) to place on the Official List of Specific Names in Zoology the name *variens* Gory, 1833, as published in the binomen *Cicindela variens*;
- (3) to place on the Official Index of Rejected and Invalid Specific Names in Zoology the name *variens* Ljungh, 1799, as published in the binomen *Cicindela variens* and as suppressed in (1) above.

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Acknowledgement of receipt of this application was published in BZN 72: 180.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3699***Thorectes* Mulsant, 1842 (Insecta, Coleoptera, SCARABAEOIDEA):
proposed conservation of usage**

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Abstract. The purpose of this application, under Articles 70.3, 74.7 and 81.1 of the Code, is to conserve the current usage of the beetle genus *Thorectes* Mulsant, 1842 (Insecta, Coleoptera, SCARABAEOIDEA, GEOTRUPIDAE) by confirmation of its type species *Scarabaeus laevigatus* Fabricius, 1798. This action will also stabilise the predominant usage of another genus, *Jekelius* López-Colón, 1989, for a phylogenetically relatively distant clade of species whose ecological importance in Mediterranean *Quercus* forests is currently under study. A lectotype is designated for *Scarabaeus laevigatus* Fabricius, 1798.

Keywords. Nomenclature; taxonomy; Insecta, Coleoptera; SCARABAEOIDEA; GEOTRUPIDAE; *Thorectes*; *Scarabaeus laevigatus*; geotrupid beetles; Palaearctica.

1. The genus *Thorectes*, a group of flightless lamellicorn beetles belonging to the family GEOTRUPIDAE (Insecta, Coleoptera, SCARABAEOIDEA), was described by Mulsant (1842, p. 367) and two nominal species were included as valid: *Thorectes laevigatus* (Fabricius, 1798, p. 23) (originally in *Scarabaeus*), the only one considered to be a French species and, in the observations on this species, also *Thorectes hemisphaericus* (Olivier, 1789) (sub *Thorectes haemisphericus*, sic). This latter species is a primary homonym of *Scarabaeus hemisphaericus* Pallas, 1781. *Thorectes laevigatus* had five new varieties described (*lineicollis*, *desjardinii*, *subgeminalis*, *subrugulosus*, *simplicidens*), which can hardly be considered available subspecific names, since they had no different type localities and relate to small individual variations; they are not

mentioned further here, as they are deemed to be infrasubspecific. Later authors have always treated this genus as having a single originally included species, which is wrong.

2. It is clear from Mulsant's text that *Thorectes laevigatus* was a misidentified species, because Fabricius (1798) described his species stating 'Habitat in Tangier. D. Schousboe. Mus. Dom. de Sehestedt'. The Fabrician species has been always correctly identified later apparently, since we do not know of any author having studied its type material. François (1904), who revised systematic and nomenclatural issues related to the genus *Thorectes*, did not check these types himself, and relied on a comparison with some of his specimens made by Frederik V.A. Meinert, who was not a specialist in Coleoptera. Its present distribution includes Morocco and Algeria (Baraud, 1985; Löbl et al., 2006). Bedel (1903) recognized Mulsant's misidentification for the first time, and used instead as the valid name for Mulsant's species *Thorectes intermedius* (O.G. Costa, 1839), originally described in *Scarabaeus*. This species was described from Otranto (Italy) (Costa, 1839) and is distributed in Italy, Sicily, South France, Corsica, Sardinia, the Balearic Islands, Croatia, Algeria and Tunisia (López-Colón, 1996; Löbl et al., 2006).

3. The other species mentioned by Mulsant, *Thorectes hemisphaericus*, is now considered to be a synonym of *Jekelius* (*Rudolfpetrovitzia*) *marginatus* (Poiret, 1787) (López-Colón, 1996; Löbl et al., 2006). It is distributed in the Maghreb countries and Sicily. *T. hemisphaericus* was originally described from '... la côte de Barbarie' (Olivier, 1789), which fits closely. François (1904) considered *T. laevigatus* (Fabricius) to be a valid species, different from *T. marginatus*, and he recognised as correct the statements made before by Bedel (1903) in relation to the identity and nomenclature of *T. laevigatus* sensu Mulsant and of authors.

4. Previous designations or mentions of type species for *Thorectes* have failed to recognise two facts: that there were two *originally* included species, so that any type species designation must be considered a subsequent designation, and that the species usually mentioned as the type of the genus, namely *Scarabaeus laevigatus*, was misidentified by Mulsant.

5. In this line, Jekel (1866, p. 523) mentions as type species *Geotrupes laevigatus* attributing it to Fabricius, unaware of the misidentification. This has been considered the type species of this genus until Bedel's (1903) article. However, Jekel's concept of this species could be a mixed one or correspond to Mulsant's.

6. Bedel (1903) pointed out the mistake in Mulsant's identification of *Thorectes laevigatus* and replaced Mulsant's misidentified species with a valid name, *Thorectes intermedius* (O.G. Costa).

7. Boucomont (1904, p. 216), in a key to the subgenera of the genus *Geotrupes* Latreille, 1797 s.l., and apparently following Bedel, mentioned for *Thorectes*: 'type: *G. intermedius* Costa = *laevigatus* auct.' This type species designation is invalid, since *Scarabaeus intermedius* O.G. Costa, 1839 was not an originally included species and *G. laevigatus* auct. is a misidentified name, excluding Fabricius as author, and thence it is unavailable, not having type specimens to support such a 'nominal species'. Anyway, Article 70.3. cannot be applied to Boucomont's designation, since he did not mention Jekel as the author of the designation, while selecting the taxonomic species actually involved, and did not cite Article 70.3.2, as requested by this Article, since it did not exist at that time.

8. López-Colón (1989) proposed a division of the genus *Thorectes* s.l. based on genitalic characters. He mentioned as type species of *Thorectes* the species *Scarabaeus laevigatus* Fabricius. He described two further subgenera: *Jekelius* López-Colón (p. 72) with type species *Geotrupes intermedius* (O.G. Costa) and *Zuninoeus* López-Colón (p. 74) with type species *Geotrupes hoppei* (Sturm & Hagenbach, 1825). He included 7 species in *Thorectes* s.str., 14 in *Jekelius* and one in *Zuninoeus*.

9. López-Colón (1996) revised the genus *Thorectes* s.l., raising *Zuninoeus* and *Jekelius* to genera, and proposing a new genus *Baraudia* López-Colón (p. 358). He also proposed several subgenera in the genera *Thorectes* s.str. and *Jekelius*.

10. Palmer & Cambefort (1997) performed a phylogenetic analysis of morphological characters under a cladistic approach. They recovered the groups proposed by López-Colón, establishing that the separation of the genera *Thorectes* and *Jekelius* probably occurred during the Eocene, before 35 myBP. These two phylogenetic lineages are thus clearly recognized and delimited.

11. Branco & Ziani (2006, pp. 28–29) selected *Scarabaeus laevigatus* sensu Mulsant, 1842 (non Fabricius, 1798) as the type species of *Thorectes* by monotypy (incorrectly) without mentioning Articles 70.3 and 70.3.2 of the Code, and confirmed its synonymy with *Scarabaeus intermedius* O.G. Costa, 1839. Since the latter is the type species of *Jekelius* López-Colón, 1989, they proposed the synonymy of the latter genus with *Thorectes* Mulsant, 1842. This action left the group considered to be *Thorectes* sensu López-Colón without a name, but they did not propose a replacement name because they synonymized all the taxa proposed by the latter author under a very widely understood genus *Thorectes*, obviating the criteria for such an action and not taking into consideration Palmer & Cambefort's findings.

12. López-Colón & Alonso-Zarazaga (2006) corrected the nomenclatural errors in Branco & Ziani (2006), revealing the fact, hitherto overlooked, that the original description included two species in the genus *Thorectes* (see para. 1 above). They mentioned as well that, since there is no monotypy, a subsequent designation was made for the first time by Jekel (see para 5. above) on *Scarabaeus laevigatus* Fabricius, 1798 (a point omitted by Branco & Ziani). They also pointed out that the type species selection of *Thorectes laevigatus* sensu Mulsant made by Branco & Ziani (2006) would cause instability and confusion, departing from the current use since the inception of the genus *Thorectes*. To avoid this, López-Colón & Alonso-Zarazaga formalized Jekel's selection under Articles 70.3 and 70.3.2 of the Code, and selected again *Scarabaeus laevigatus* Fabricius, 1798.

13. Branco & Ziani (2007) challenged the corrections made by López-Colón & Alonso-Zarazaga (2006) and maintained their 2006 position, this time arguing that Jekel's (1866) concept of *S. laevigatus* was a mixture and that Boucomont (1905) had already settled the problem with his choice of *G. intermedius* as the type species (but see para. 7 above). However, they also stated: '...if *Jekelius* has been as widely used as López-Colón & Alonso-Zarazaga (2006) claim, it could be conserved as a valid name... We would not oppose such a proposal to the Commission...'

14. Cunha et al. (2011) performed a phylogenetic study based on molecular characters. They showed support for a more ancient origin of the lineage splitting, dating it back to the Cretaceous-Tertiary boundary (65.5 myBP). This implied that the Iberian lineages are most likely paleoendemics surviving from the Tertiary in this refugial area and that the proposed genera of López-Colón represent independent

lineages appeared at a time similar to other well-established GEOTRUPIDAE genera, thus supporting López-Colón's division into monophyletic clades. Lobo et al., (2015) widened the scope of the molecular analysis and obtained further support. It is thus important to fix the name for each implied clade.

15. There is no effective type specimen designation for *Scarabaeus laevigatus*. As mentioned in para. 2, François (1904) relied upon a mention made by F. Meinert of a certain specimen in the Sehestedt-Lund collection being 'the type', but this is not described or otherwise identified, and the existence of syntypes is not mentioned, thus not fulfilling the requisites of Article 74.5. At our request, the Museum of Zoology of the University of Copenhagen has communicated five specimens, two coming from the Sehestedt-Lund collection (the so called 'Copenhagen collection') and three coming from the J.C. Fabricius collection (the so called 'Kiel collection'). The last three are not syntypes, because only the Sehestedt collection is mentioned as the source for the uncertain number of specimens constituting the syntypes. This number is not mentioned in the original description. Of the two specimens of the Sehestedt-Lund collection, one is a male with a handwritten label 'Tanger. / Schousboe. / Mus. de Sehestedt / Scarabaeus / laevigatus. / F.', a printed label 'ZMUC / 00513752' and a red printed label 'TYPE'. This specimen corresponds to the usual concept of *Thorectes laevigatus* (Fabricius, 1798). The other specimen is a male with a handwritten label 'Thor. / trituber / lat. Reitt.' and a printed label 'ZMUC / 00513753'. It belongs to the species *Thorectes trituberculatus* (Reitter, 1893). It seems evident that the red label 'TYPE' pinned under the first specimen corresponds to the concept used by François via Meinert. It is also probable that François via Meinert added this label. We formally designate here this specimen as the lectotype of *Scarabaeus laevigatus* Fabricius, 1798, adding an appropriate label.

16. Since López-Colón (1989, 1996) and Branco & Ziani (2006), authors have been using one or the other nomenclatural proposal in their works from 1990 on. A list of these publications has been placed with the Commission Secretariat, which includes 46 works following López-Colón's proposal and 13 following Branco & Ziani's. This situation is confusing and destabilizing, and needs to be fixed, also as consequence of recent important discoveries about the ecology and physiology of *Thorectes* species (sensu López-Colón). The species of the subgenus *Thorectes* are capable of eating and burying the acorns of *Quercus* species (Pérez Ramos et al., 2007; Verdú et al., 2011) acting as effective seed dispersers for these plant species (Pérez Ramos et al., 2013). Furthermore, this surprising dietary shift for a dung beetle species improves the resistance to low temperatures and the ovarian development (Verdú et al., 2010), as well as the immune response of these beetles (Verdú et al., 2013). These ecophysiological advantages seem to be specific of the *Thorectes* species belonging to the subgenus *Thorectes* that inhabit both the Iberian Peninsula and North Africa (unpublished data). As this probable coevolutionary process may mean an important future source of research and it seems to be phylogenetically constrained to the species of a subgenus not recognized by Branco & Ziani's (2006) nomenclatural proposal, we consider that it would be advisable to remove the uncertainty affecting the nomenclature of the taxonomical categories proposed by López-Colón.

17. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to set aside all fixations of type species for the nominal genus *Thorectes* Mulsant, 1842 prior to the designation of *Scarabaeus laevigatus* Fabricius, 1798 by López-Colón & Alonso-Zarazaga (2006) as the type species;
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Thorectes* Mulsant, 1842 (gender: masculine), type species by subsequent designation by López-Colón & Alonso-Zarazaga (2006) *Scarabaeus laevigatus* Fabricius, 1798, as ruled in (1) above;
 - (b) *Jekelius* López-Colón, 1989 (gender: masculine), type species by original designation *Scarabaeus intermedius* O.G. Costa, 1839.

Acknowledgements

Financial support has been provided by the project CGL2011-25544 of the Secretaría de Estado de Investigación, Ministerio de Educación, Ciencia e Innovación, Spain.

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Acknowledgement of receipt of this application was published in BZN 72: 267.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3695***Dimetrodon* Cope, 1878 (Synapsida, SPHENACODONTIDAE): proposed conservation by reversal of precedence with *Bathygnathus* Leidy, 1853**

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Abstract. The purpose of this application, under Article 23.9.3 of the Code, is to conserve the widely used generic name *Dimetrodon* Cope, 1878 (SPHENACODONTOIDEA, SPHENACODONTIDAE). The name *Dimetrodon* is threatened by its senior subjective synonym *Bathygnathus* Leidy, 1853. The name *Dimetrodon* has become widely accepted and is in prevailing usage. It is proposed that *Dimetrodon* be given precedence over *Bathygnathus* whenever these names are considered to be synonyms.

Keywords. Nomenclature; taxonomy; Synapsida; SPHENACODONTOIDEA; SPHENACODONTIDAE; *Bathygnathus*; *Bathygnathus borealis*; *Dimetrodon*; Permian; Canada; U.S.A.

1. *Bathygnathus borealis* Leidy, 1853 was named based on a partial jaw (Academy of Natural Sciences Philadelphia [ANSP] 9524) collected from the Early Permian redbeds of Prince Edward Island, Canada (Leidy, 1853, p.404). The specimen was described in detail and illustrated by Leidy the following year (Leidy, 1854). The generic name refers to the height of the jaw, as the specimen was presumed to be the lower jaw of a bipedal saurian upon initial description (Leidy, 1854). Subsequent publications erroneously referred to the species as a bipedal saurian, an early archosaur or phytosaur, or a dinosaur (Owen, 1860, pp. 252–253; Dawson, 1855, pp. 108–114, fig. 8a, b; Dawson, 1868, pp. 119–122, fig. 29a, b; Dawson, 1878, fig. 29a, b; Dawson, 1891, fig. 29a, b; Cope, 1867, pp. 234–235; Leidy, 1868, pp. 199–200; Leidy, 1885; Marsh, 1877, p. 344). Owen (1876, p. 359, fig. 9) re-described *Bathygnathus borealis* as the maxilla of a theriodont. Lesley (1889, p. 80) included *Bathygnathus* in a catalogue of fossil material, reproducing Dawson's (1855) drawings of the specimen as a dentary, but noted in the erratum (p. x) that Dawson illustrated the specimen upside down. In two independent publications, Case (1905) and von Huene (1905) both noted that *Bathygnathus* was in fact a partial upper snout of a sphenacodontid synapsid. The specimen has been listed and described as a sphenacodontid several times since, but the precise phylogenetic position of this taxon remained unknown (Case, 1907; Romer & Price, 1940; Reisz, 1986; Langston, 1963; Eberth, 1985; Spalding, 1995; Brink et al., 2013). No other nominal species of *Bathygnathus* have been described.

2. The most recent re-description of ANSP 9524 included CT scan data and two phylogenetic analyses. Brink et al. (2015) synonymized *Bathygnathus* and *Dimetrodon* (Cope, 1878, p. 512; type species *D. incisivus* by original designation following Article 68.2.1), but retained the species name *borealis* based on the presence of an autapomorphy and suggested that *Bathygnathus borealis* should now be known as *Dimetrodon borealis*. This results in 14 species of *Dimetrodon* accepted as valid.

3. Following Article 23.1 of the Code, *Bathygnathus* has priority over *Dimetrodon*. However, as *Dimetrodon* is well-known in the literature and popular culture, a reversal of precedence is required to preserve *Dimetrodon* and retain universality. A non-exhaustive list of 100 citations using the name *Dimetrodon* as valid is kept by the Commission Secretariat. The reversal of precedence is requested because *Bathygnathus* does not meet all the requirements of Article 23.9 for a nomen oblitum, specifically, Article 23.9.1.1.

4. The International Commission on Zoological Nomenclature is accordingly asked:

- (1) to use its plenary power to rule that the name *Dimetrodon* Cope, 1878 is to be given precedence over *Bathygnathus* Leidy, 1853, whenever the two are considered to be synonyms;
- (2) to place on the Official List of Generic Names in Zoology the following names:
 - (a) *Dimetrodon* Cope, 1878 (gender: masculine), type species by original designation *Dimetrodon incisivus* Cope, 1878, with the endorsement that it is to be given precedence over *Bathygnathus* Leidy, 1853, whenever the two are considered to be synonyms;
 - (b) *Bathygnathus* Leidy, 1853 (gender: masculine), type species by monotypy *Bathygnathus borealis* Leidy, 1853, with the endorsement that it is not to be given priority over *Dimetrodon* Cope, 1878, whenever the two are considered to be synonyms;
- (3) to place on the Official List of Specific Names in Zoology the following names:
 - (a) *incisivus* Cope, 1878, as published in the binomen *Dimetrodon incisivus* (specific name of the type species of *Dimetrodon*);
 - (b) *borealis* Leidy, 1853, as published in the binomen *Bathygnathus borealis* (specific name of the type species of *Bathygnathus* Leidy, 1853).

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Acknowledgement of receipt of this application was published in BZN 72: 180.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Case 3678**A proposal to affirm that ‘Formenkreis’ is not a genus-group taxonomic rank with potential availability**

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Abstract. The purpose of this application, under Article 89.1.1 of the Code, is to promote universality in the interpretation of the notion ‘superspecies’ as used in Article 10.4 of the Code, particularly with respect to certain European land snails, by asking the Commission to rule that ‘Formenkreis’ (plural ‘Formenkreise’) is not a genus-group taxonomic rank with potential availability. According to Article 10.4 of the Code not all subdivisions of a genus are equal. A borderline exists between ‘section’ or ‘division’, both deemed to be subgenera, and a still lower level of taxa that are referred to with ‘a term such as superspecies’. The term ‘superspecies’ was introduced by Mayr (1931) as a gloss, for international use, of the German term ‘Artenkreis’, which itself was a replacement term for ‘Formenkreis’. This implies that a name proposed for a ‘Formenkreis’ should not be deemed to be a genus-group name.

Keywords. Nomenclature; taxonomy; superspecies; Formenkreis; land snails.

1. Article 10.4 of the Code reads: ‘A uninominal name proposed for a genus-group division of a genus, even if proposed for a secondary (or further) subdivision, is deemed to be a subgeneric name even if the division is denoted by a term such as “section” or “division”; but a name used for an aggregate of species which is denoted by a term such as “superspecies” is not deemed to be a genus-group name.’

2. Therefore according to Article 10.4 of the Code not all subdivisions of a genus are equal. This is obvious because of the use of the wording ‘even . . . a . . . section or division’, suggesting that this is the lowest level in the taxonomic hierarchy which can be given a genus-group name. Article 10.4 continues with ‘but’, which is indicative of a case of exclusion. Lower taxa in the hierarchy are excluded. The level that is excluded is denoted by a term ‘such as “superspecies”’.

3. The Code does not specify, in the Glossary or elsewhere, which ranks constitute ‘a term such as “superspecies”’, but the literature on systematic zoology leaves no doubt that the German ‘Formenkreis’ is such a term, if not a pure synonym of superspecies. Stresemann (1936) explicitly dealt with the concept of ‘Formenkreis’, showing its similarity to what became known as superspecies later on. Mayr & Ashlock (1991), in their fundamental ‘Principles of Systematic Zoology [2nd ed.]’, cited ‘Artenkreis’ as a synonym for superspecies while stating (p. 53), ‘Since the literal translation “circle of species” was frequently misunderstood, Mayr (1931) introduced the term *superspecies* as a convenient international equivalent’. Mallet (2001, 2004, 2007) explained that Rensch (1929) had replaced the term ‘Formenkreis’ (circle of

forms) by two new terms, viz. ‘Rassenkreis’ (circle of races) and ‘Artenkreis’ (circle of species).

4. Names introduced under the heading ‘Formenkreis’ for European land snails by Wagner (1897) were not accepted as valid in the malacological monographs of Thiele (1929–1931), Wenz (1938–1944), and Zilch (1959–1960). As a consequence, Giusti (1971, p. 353), for example, introduced the generic name *Toffolettia* for *Pomatias striolatum* Porro, 1840, neglecting the name *Striolata*, which was given by Wagner (1897, p. 569 [5]) to a ‘Formenkreis’ that included this nominal species. Sysoev & Schileyko (2009, p. 10) subsequently used *Toffolettia* as a valid generic name. Recently, Zallot et al. (2015), in a revision of the genus-group taxonomy of the COCHLOSTOMATIDAE, also regarded the 19 names that were used for taxa at the rank of ‘Formenkreis’ by Wagner (1897) as invalid under Article 10.4 of the Code.

5. Article 6.2 of the Code, along with its accompanying Example, offers the possibility of interpolating a specific name in parentheses between the genus-group name and the specific name, to denote an aggregate of species within a genus-group taxon. The nominal species mentioned in the preceding paragraph could be called *Pomatias* (superspecies *striolatum*) *striolatum* at its first appearance in a work, and *P.* (*striolatum*) *striolatum* thereafter; in Giusti’s (1971) new combination, the name would become *Toffolettia* (*striolata*) *striolata*. Wagner (1897) used 15 ‘Formenkreis’ names that are identical to the specific name of one of the included species and are thus amenable to this sort of treatment, but four other ‘Formenkreis’ names do not correspond to a specific name but were independently based on rareness or distribution, viz., *Rara* (p. 568 [4]), *Tunetana* (p. 569 [5]), *Cisalpina* (p. 569 [5]), and *Neglecta* (p. 570 [6]). Therefore Article 6.2 cannot be applied here in a fully satisfactory way.

6. Falkner et al. (2002, p. 69) did not accept *Toffolettia* Giusti, 1971 and regarded *Striolata* Wagner, 1897 as a valid, senior, genus-group name. These authors, while referring to the ‘Formenkreis *Striolata*’, stated without any further explanation that this name was valid under Article 10.4 of the Code. Riedel (1980) also accepted names given to ‘Formenkreise’ as valid, viz. *Crystallinus* Wagner, 1907 [= *Crystallus* Lowe, 1854], and *Subrimatus* Wagner, 1907.

7. The two incompatible opinions regarding the validity of names proposed for ‘Formenkreise’, both allegedly dictated by Article 10.4 of the Code, disturb universality in the malacological nomenclature. To avoid confusion, the meaning of the word ‘superspecies’, as used in Article 10.4 of the Code, should not differ from the meaning that is attributed to this and similar terms in general systematic zoology. Treating ‘Formenkreis’ and its above-mentioned German synonyms as an aggregate of species equivalent to a ‘superspecies’ meets this goal best. A negative ruling on either of the proposals below must be interpreted, however, as an affirmation that names of the stated rank are indeed to be treated as subgeneric names.

8. The International Commission on Zoological Nomenclature is accordingly asked to use its specific powers to rule:

- (1) that ‘Formenkreis’ (plural ‘Formenkreise’) is not a genus-group taxonomic rank with potential availability;
- (2) that ‘Rassenkreis’ and ‘Artenkreis’ (respective plurals ‘Rassenkreise’ and ‘Artenkreise’), being synonyms of ‘Formenkreis’ in (1) above, are also not genus-group taxonomic ranks with potential availability.

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Acknowledgement of receipt of this application was published in BZN **72**: 2.

Comments on this case are invited for publication (subject to editing) in the *Bulletin*; they should be sent to I.C.Z.N., Natural History Museum, Cromwell Road, London SW7 5BD, U.K. (e-mail: iczn@nhm.ac.uk).

Comments on *Cognettia* Nielsen & Christensen, 1959 (Annelida, Oligochaeta, ENCHYTRAEIDAE): proposed precedence over *Euenchytraeus* Bretscher, 1906 and *Chamaedrillus* Friend, 1913

(Case 3689; see BZN 72: 186–192)

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As we were responsible for re-establishing *Euenchytraeus* Bretscher, 1906 and *Chamaedrillus* Friend, 1913, suggesting that *Cognettia* Nielsen & Christensen, 1959 should be treated as a junior synonym of *Chamaedrillus* (Martinsson et al., 2014; cited as 2015a by Schmelz et al.), we would like to give some supplementary information on the case, and also explain the reasoning behind the reestablishments. In their appeal to the Commission, Schmelz et al. (BZN 72: 186–192) give a good repetition of the taxonomical history of the taxa involved (detailed by us in Rota et al., 2008; Martinsson et al., 2014, 2015). However, we would like to highlight a few additional points.

1. The case in question (our invalidation of *Cognettia* in favour of *Chamaedrillus* and *Euenchytraeus*) arose after two of us (Martinsson & Erséus, 2014) provided molecular evidence that *Cognettia sphagnetorum* (Vejdovský, 1878) in its commonly accepted definition, based on Nielsen & Christensen's (1959) revisionary work, is a non-monophyletic complex of species. Given the relevance of these worms in soil ecological studies, this resulted in an urgent need of taxonomic revision within *Cognettia*, a revision that we carried out (Martinsson et al., 2014) using genetic and morphological data.

2. Before our revision (Martinsson et al., 2014), *Pachydrilus sphagnetorum* Vejdovský, 1878, the nominal species designated by Nielsen & Christensen (1959) as type species of *Cognettia*, had no extant type material.

3. The type species of *Chamaedrillus*, *Ch. chlorophilus* Friend, 1913, is represented by two syntypes preserved in the Natural History Museum, London (NHM), slide BMNH 1949.3.1.32 (Martinsson et al., 2014). As documented by register records at NHM, this slide contains 'Friend's types of *Chamaedrillus chlorophilus*' (source: NHM (2014). Dataset: Collection specimens. Resource: Specimens, <http://dx.doi.org/10.5519/0002965>, Retrieved: October 2015). We borrowed this slide for our

re-investigation of *Ch. chlorophilus* (Martinsson et al., 2014 and designated the mature syntype as lectotype).

4. When Nielsen & Christensen (1959) redescribed the type species of *Cognettia*, they mentioned the frequent occurrence of a ‘single sub-median supernumerary bulb’ in front of the penial bulbs. In revising the *C. sphagnetorum* species complex, we found this feature to occur only in combination with the chaetal arrangement (2 chaetae in preclitellar lateral bundles and 3 chaetae in other bundles) that is specific for *Ch. chlorophilus* (Martinsson et al., 2014). Thus, Nielsen & Christensen (1959) had – intentionally or not – treated *C. sphagnetorum* and *Ch. chlorophilus* as one and the same species. We do not know whether Nielsen & Christensen (1959) missed that *Ch. chlorophilus* had been synonymised with *C. sphagnetorum* by Černosvitov (1937a) (subjective junior synonymy) – which would be noteworthy, as they discussed Friend’s taxa in their introduction. In any case, Nielsen & Christensen (1959) established *Cognettia* on the same type species as that of *Chamaedrillus* and this indeed makes *Cognettia* as a genus an invalid name (objective junior synonymy). It is as if Nielsen & Christensen (1959) had replaced *Chamaedrillus* by an unjustified emendation and without proposing *Cognettia* expressly as a new replacement name (nomen novum). *Chamaedrillus* was still an available name, its replacement not being required by any provision of the Code.

5. According to Schmelz et al. (2015), the main reason for giving precedence to *Cognettia* over *Chamaedrillus* would be the prevention of nomenclatural confusion in view of the importance of *Cognettia* species, and particularly of *C. sphagnetorum*, in soil ecological research. The problem is, however, that neither *C. sphagnetorum* nor *C. glandulosa* (Michaelsen, 1888b), the two most ‘popular’ enchytraeid names in soil ecology literature, each correspond to single species when identified, as has been done for decades, using Nielsen & Christensen’s (1959) diagnoses – or even worse, if identified according to the broadened definitions recently proposed by Schmelz & Collado (2010, 2012a). It is still the opinion of several ecologists that the ENCHYTRAEIDAE or at least their genera respond homogeneously to environmental drivers. However, community analyses conducted at the species level (e.g. Rota et al., 2013) show clearly that within enchytraeid genera there can be a variety of ecological tendencies. Nielsen & Christensen’s (1959) diagnosis of *C. sphagnetorum* identified a non-monophyletic set of species (Martinsson & Erséus, 2014) that has now been formally resolved into four separate *Chamaedrillus* species with distinct ecology (Martinsson et al., 2014). *Cognettia glandulosa*, as well, in its long-accepted definition included two well-separate genetic lineages (Martinsson & Erséus, 2014); these too have been recently formalized as two distinct *Chamaedrillus* taxa, morphologically very similar (differing mainly in size) but preferring different habitats (Martinsson et al., 2015). Unfortunately, when reading through the ecological literature on *Cognettia*, one cannot tell which single taxonomic unit was the object of each ecological study, or where and when a mixture of species was involved.

For the reasons stated above, neither the bulk of ecological studies nor the recent soil biology textbooks will be unburdened from serious ambiguities if the name *Cognettia* is preserved, because data are referred monospecifically to species assemblages with heterogeneous ecology. It is our hopeful conviction, instead, that a new nomenclature combined with a better taxonomic resolution at species level will serve

to prompt a fresh start in the ecological characterization of the individual taxonomic units in the '*Cognettia*' world.

6. Taxonomic clarity, geographic distribution and ecological range of genera and species are all aspects still in a state of uncertainty for many components of the ENCHYTRAEIDAE (Rota & de Jong, 2015) and all efforts should be focused to improve quality in genera and species circumscriptions, for instance as fundamental prerequisites for biodiversity assessment in any geographical region. The nomenclatural distinction of *Euenchytraeus* Bretscher, 1906 from *Chamaedrillus* aims at this same purpose, as we already have evidence that the two taxa are phylogenetically separate.

7. When we started our revision (Martinsson et al., 2014) and considered that *Chamaedrillus* and *Euenchytraeus* should replace the widely used *Cognettia*, we were at first concerned that changes in customary usage might create instability, and reflected on submitting to the Commission a case similar to the one here discussed. However, personal experience from one of us (Erséus et al., 2005; ICZN, 2007) made us hesitate, as it is a fairly long process with an uncertain outcome. On the other hand, the synonymy between *Cognettia*, *Chamaedrillus* and *Euenchytraeus* was pointed out earlier by Schmelz & Collado (2010, p. 82) themselves, with the remark: "To conserve *Cognettia* as valid name a proposal towards the ICZN is necessary", but such a proposal (that we would have welcomed, if it had been submitted to the Commission earlier) never appeared in the next few years. Therefore, having underway our phylogenetic revision of these taxa, we decided to simply follow the code: re-establish *Chamaedrillus* as a senior synonym of *Cognettia* and resuscitate *Euenchytraeus* as a valid genus (Martinsson et al., 2014).

8. The taxonomy of ENCHYTRAEIDAE has for a long time been under soft rules and some of the family's early nomenclature is in continuous revision and evolution. It is true, as Schmelz et al. (2015) state, that 'the nomenclatural and taxonomic framework established in Nielsen & Christensen (1959) was widely accepted by taxonomists and non-taxonomists' and that 'their 1959 monograph, followed by two supplements (Nielsen & Christensen, 1961, 1963) launched a new era of research with enchytraeids, particularly in the field of soil ecology'. However, Nielsen & Christensen (1959, 1961, 1963), as often noted (e.g. Brinkhurst, 1971; Schmelz, 2003) and by their own admission (1959, p. 10), did not always comply with the rules of the Code, as they 'decided not to embark upon an unpromising formal revision of all original descriptions and type material that might be extant in various collections'. Thus, in spite of their huge effort and merits, their critical revision of ENCHYTRAEIDAE left the nomenclature of many taxa subject to debate and the genus-level and species-level taxonomy in many cases problematic and typological. By recognizing and delimiting monophyletic groups based on common descent, phylogenetic methods are gradually alleviating some of the classification problems – as are molecular analyses effective in helping detecting and separating cryptic species. With regard to nomenclature, Rota & de Jong (2015) have listed the novelties (new nomina and nomenclatural acts) occurred just in the last 10 years among the enchytraeid species and genera living in Europe: 39 new species, 11 new combinations, 8 reinstatements as valid names, 4 rejected synonymies.

9. The name change from *Cognettia* to *Chamaedrillus* has already started to be accepted by both ecologists and taxonomists and, since the time of our revision (Martinsson et al., 2014), several publications have treated *Chamaedrillus* as a valid

name (Boros & Dózsa-Farkas, 2015; Dózsa-Farkas et al., 2015; Holmstrup et al., 2015; Martinsson et al., 2015; Rota & de Jong, 2015; Schmelz & Collado, 2015; Torii, 2015), indicating that the name change from *Cognettia* to *Chamaedrillus* may not create the feared instability predicted by Schmelz et al. (2015). Furthermore, two species, *Chamaedrillus varisetosus* Martinsson, Rota & Erséus, 2015 and *Chamaedrillus ozensis* Torii, 2015, have been described after our revision. There is a risk that it would be even more confusing and create more instability if the name for this genus is to change back to *Cognettia* from *Chamaedrillus*.

In fact, more confusion in zoological nomenclature may originate from, and be sustained by, inconsistent, contradictory communications: for instance, Schmelz & Collado (2015) in updating the list of valid taxa of ENCHYTRAEIDAE, accepted the new *Chamaedrillus* and *Euenchytraeus* synonymies, but then, shortly afterwards, the same authors proposed rejection in favour of the old *Cognettia* names (Schmelz et al., 2015). Similarly, at the species level, those same authors (Schmelz & Collado, 2010, p. 79; 2012a, p. 56; 2012b, p. 70) first lumped a number of morphologically distinct species under the name '*C. sphagnetorum* sensu lato', but then reconsidered their act by publishing again those species as revalidated and assigned to *Chamaedrillus*.

10. In sum, the progress in the knowledge of the family ENCHYTRAEIDAE can be furthered only by a continually refined taxonomy and by nomenclature following the system: stability must not have priority over lack of ambiguity. We are well aware of the multidisciplinary relevance of zoological names, and it is precisely for this reason that names should be assigned correctly and univocally, and be used consistently by taxonomists, ecologists and experimental scientists as means for scientific communication. Through our proposed new nomenclature, and improved taxonomic resolution, we will gain a much better understanding of several '*Cognettia*' taxa that were thus far confounded in soil research.

11. The points above lead us to the conclusion that *Euenchytraeus* Bretscher, 1906 and *Chamaedrillus* Friend, 1913 ought to be kept as valid names, and that there are no contraindications for treating *Cognettia* Nielsen & Christensen, 1959 as a junior synonym of *Chamaedrillus*.

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We support the proposition to give precedence of the widely used name *Cognettia* over *Chamaedrillus* and *Euenchytraeus*, which had not been used as valid for almost a century. In addition to the detailed explanations by Schmelz et al. (2015) we emphasize the importance of the name in long-term soil observation programmes (soil monitoring) where it is used to characterize specific soil communities with *Cognettia sphagnetorum* as indicator species. In this context the terms ‘Cognettietalia’ (Order), ‘Achaeto-Cognettion’ (Alliance), ‘Cognettion sphagnetorum’ (Alliance), ‘Achaeto-Cognettietum’ (Association) and ‘Cognettietum sphagnetorum’ (Association) are established designations within the system of decomposer community types (Graefe, 1993a, 1993b; Fründ & Graefe, 1994; Beylich et al., 1994, 1995; Graefe, 1998; Graefe et al., 2001, 2002; Höper, 2002; Beylich & Graefe, 2002; Graefe & Beylich, 2003; Beylich et al., 2005; Beylich & Graefe, 2009). These community types are also reported in more than 50 unpublished technical reports on behalf of soil protection agencies. The re-establishment of a generic name that has been out of use for generations for such a well-known and widespread species as *Cognettia sphagnetorum* will in our opinion cause considerable confusion instead of clarifying the situation.

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The nominal genus *Cognettia* has been used during the last 55 years in hundreds of books and papers in different branches of biology. Replacing it with either of two virtually forgotten names will cause unjustified mess not only in taxonomical but also in applied literature. Even more, the discussed synonymy between these two names, *Chamaedrillus* and *Euenchytraeus*, will produce endless nomenclatural instability. That is why I support conservation of the genus name *Cognettia*, suppressing the priority of the senior synonyms *Chamaedrillus* and *Euenchytraeus*.

Comment on *Tipula contaminata* Linnaeus, 1758 (currently *Ptychoptera contaminata*; Insecta, Diptera): proposed conservation of prevailing usage through designation of a neotype

(Case 3664; see BZN 71: 237–243)

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In their recent revision of the holotype of *Tipula contaminata* Linnaeus, 1758, Fasbender & Courtney (BZN 71: 237–243) found the specimen to belong to TIPULIDAE and not to match the current concept of the species as near-universally accepted from Meigen (1803) onwards. Retaining Linnaeus' original syntype as valid would threaten not only the species nomen, but also the stability of the genus name *Ptychoptera* Meigen, 1803 and the family-group name PTYCHOPTERIDAE Osten Sacken, 1862, both well-known and well-established nomina in dipteran taxonomy. Their proposed solution to the problem was to designate a Danish male specimen as neotype of the species, to preserve the concept of *Ptychoptera contaminata* as recognized by at least 22 different authors. We essentially agree with these interpretations and consider their proposal an elegant solution to the problem.

Designating a neotype for a well-established species can be problematic if the taxonomic status of the species is questionable, e.g. if it forms part of a species complex. Luckily, the available evidence suggests that *Ptychoptera contaminata* is a valid species well delimited from other species of *Ptychoptera* in the Palearctic region.

In our ongoing work on DNA barcoding of European PTYCHOPTERIDAE, *Ptychoptera contaminata* sequences form a distinct cluster separate from all other species (Fig. 1). The molecular data set is available online at BOLD (<http://dx.doi.org/10.5883/DS-EBPTYCH>). In our analyses, sequence variability is low, with a maximum intraspecific p-distance of 1.61% (Fig.1). Furthermore, we are not aware of any morphological variation in *P. contaminata* to suggest any ambiguity in the concept outlined in Case 3664.

In conclusion, we find Fasbender & Courtney's argument compelling and recommend that the Commission follow both of their recommendations.

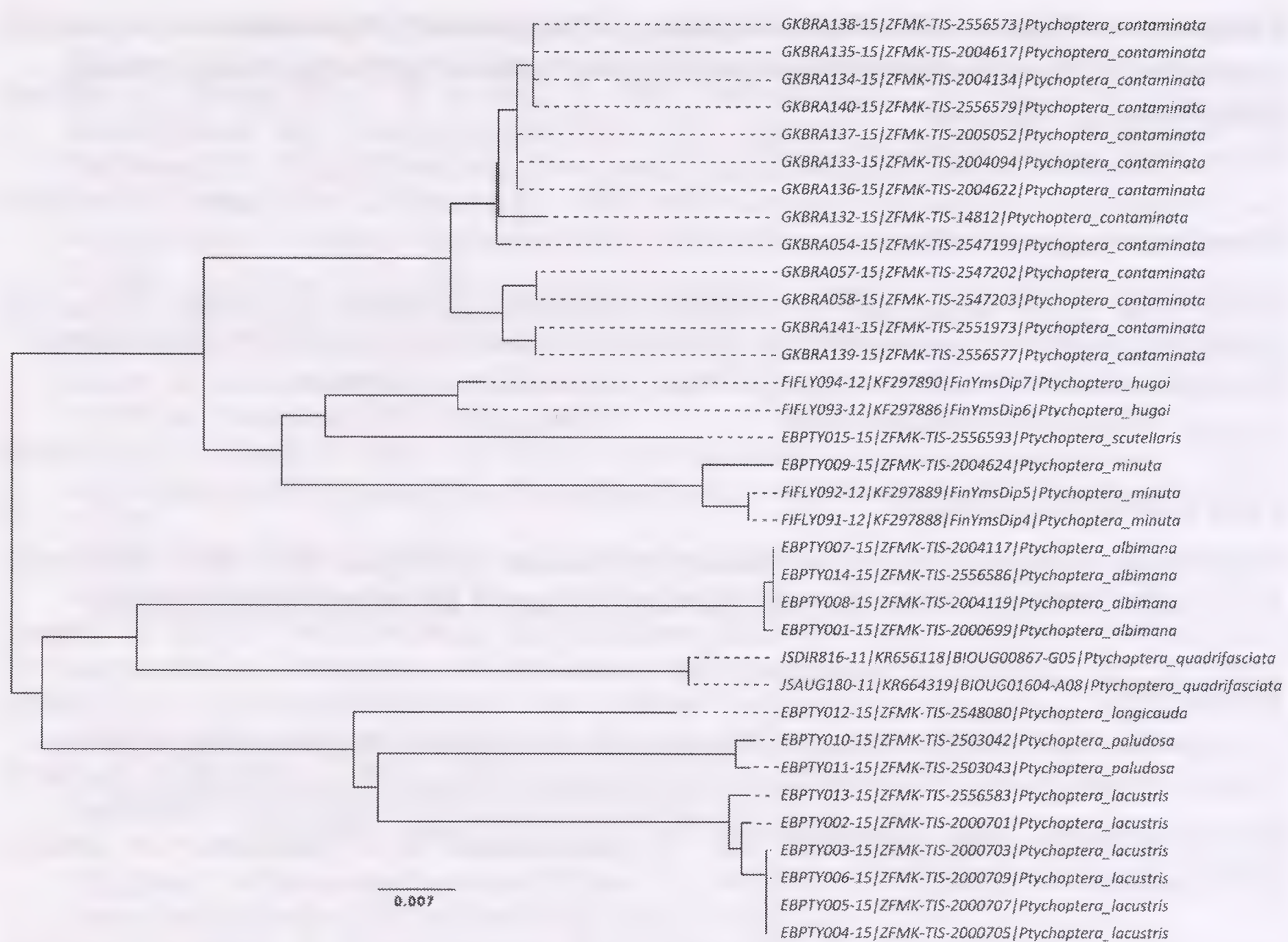


Fig. 1. Unrooted neighbour-joining phenogram of *Ptychoptera* CO1 sequences in GBOL and NorBOL, computed based on pairwise distances in MEGA6 (Tamura et al., 2013). BOLD accession numbers are given for each specimen.

Acknowledgements

DNA barcodes of European PTYCHOPTERIDAE are obtained through NorBOL, which is funded by the Norwegian Research Council and the Norwegian Biodiversity Information Centre; and through GBOL, which is funded by the German Federal Ministry for Education and Research (BMBF #01LI1101A).

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Comments on the work ‘The White-cheeked Geese: *Branta canadensis*, *B. maxima*, *B. ‘lawrensis*’, *B. hutchinsii*, *B. leucopareia*, and *B. minima*. Taxonomy, ecophysiographic relationships, biogeography, and evolutionary considerations, Volume 1, Eastern taxa; Volume 2, Western taxa, biogeography, and evolutionary considerations’ by Harold C. Hanson: proposed suppression for nomenclatural purposes

(Case 3682; see BZN 72: 209–216)

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As a member of the Working Group on Avian Nomenclature of the International Ornithologists’ Union I contributed an opinion on the draft of the proposal by Banks, LeCroy & Schodde and supported their application.

As Managing Editor of the 4th Edition of the Howard & Moore Complete Checklist of the Birds of the World, of which the non-passerine Volume appeared in 2014 co-edited with J.V. Remsen Jr., consideration was given to the Hanson monograph. At our request our friend Norbert Bahr listed the new taxa proposed in Hanson’s book. The three line introduction to that list (pp. 394–397 in the Checklist) stated that the Volumes awaited assessment by the American Ornithologists’ Union’s Committee on Classification and Nomenclature. The checklist editors decided to prevaricate in this way because they could not seriously accept Hanson’s proposals, but nor did they feel that authority to reject them in whole or in part lay elsewhere than with the competent North American ornithological community. We were already aware that the United States Fish and Wildlife Service considered Hanson’s work to be a major potential destabilisation of the debate about species limits in this complex and that many of the subspecific proposals were based on specimens collected in their winter quarters without knowledge of their home range and thus had the potential to create serious confusion.

I have no hesitation in recommending that the Commission consider the proposed suppression of this work to be both appropriate and justified.

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I write to strongly support the requests stated in Case 3682 to suppress this work by Hanson. Banks et al. have given a compelling detailed description, explanation and rationale, which justify this critical action based on an objective and reasonable assessment of your defining and guiding Code.

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We are writing to register our support for the proposed suppression of the work 'The White-cheeked Geese. . .' by Harold C. Hanson. Suppression of entire taxonomic works for nomenclatural purposes should be considered only in exceptional cases. We believe this is such a case. The aforementioned work introduces an extreme number of species-group names on the basis of inappropriately chosen types and inadequate diagnoses. These and other issues identified by Banks, LeCroy & Schodde (BZN 72: 209–216) would cause an unacceptable number of problems for ornithological nomenclature, which are best avoided by suppressing the entire two-volume work and placing it on the Official Index of Rejected and Invalid Works in Zoological Nomenclature.

(4) Storrs L. Olson

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I am in complete agreement with Banks, LeCroy and Schodde that the works by Hanson on white-cheeked geese (*Branta*) should be suppressed for purposes of nomenclature. As the authors have abundantly demonstrated, the works were undertaken with little or no regard or knowledge of proper nomenclatural procedures. It might also be noted that failure to suppress this work might actually discourage future researchers from undertaking the studies still needed to determine the extent and geographical limits of variation within this complex group, as no one would wish to be saddled with the unrewarding task of trying to relate their legitimate results to these confusing accounts by Hanson.

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I strongly support the suppression of the work by Harold C. Hanson (2006–2007), as proposed by Banks, LeCroy & Schodde. The comprehensive work done by these authors clearly shows that, if not suppressed, Hanson's work will create both nomenclatorial and taxonomic confusion and eventual chaos among those dealing with the taxa involved. Furthermore, I do not believe that any of the other options discussed by Banks, LeCroy & Schodde in their paragraph 11, other than complete nomenclatorial suppression of the entire work, will succeed in solving the great number of irregularities and flaws contained in Hanson's work.

Letters of support for Case 3682 were also received from Daniel D. Gibson, (*University of Alaska Museum, Fairbanks, Alaska, U.S.A.*; e-mail: avesalaska@gmail.com), Bruce M. Beehler (*Division of Birds, MRC 116, National Museum of Natural History, PO Box 37012, Smithsonian Institution, Washington DC, U.S.A. 20013*; e-mail: brucembeehler@gmail.com) and Jay M. Sheppard (*Ornithological Literature, Laurel, Maryland, U.S.A.*; e-mail: jaymsheppard95@gmail.com).

Comment on the proposed conservation of *Neobisium* Chamberlin, 1930, NEOBISIOIDEA Chamberlin, 1930, NEOBISIIDAE Chamberlin, 1930 and NEOBISIINAE Chamberlin, 1930 (Arachnida, Pseudoscorpiones, Chelonethi) by designation of *Obisium muscorum* Leach, 1817 as the type species of *Obisium* Leach, 1814 (Case 3616; see BZN 70: 75–81, 249; 72: 221–226)

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The present comment addresses Alonso-Zarazaga's criticisms concerning Case 3616 and the alternative proposals he presents to the Commission for its resolution (BZN 72: 221–222). According to Alonso-Zarazaga, my application was flawed because it failed to explain the 'real' situation in Leach's (1814) text, particularly the fact that *Obisium* Illiger, 1798 was treated as a synonym of *Chelifer* Geoffroy, 1762 in that work. Unfortunately, Alonso-Zarazaga does not take into account my earlier analysis of this matter (Judson, 2012), with the result that his presentation is an oversimplification. The relevant synonymies can be summarized as follows:

1. Geoffroy (1762) published the generic name *Chelifer* for *Acarus cancroides* Linnaeus, 1758 (a pseudoscorpion) and *A. longicornis* Linnaeus, 1758 (a mite), without designating a type species. The name *Chelifer* was invalid because it was published in a work that was not consistently binominal (Article 11.4). However, it was later conserved by Opinion 1542 (BZN 46: 143).

2. Illiger in Kugelann & Illiger (1798) introduced the name *Obisium* Illiger, 1798 for '*Scorpio cancroides* et *cimicoïdes* Fabr.' [i.e. *Acarus cancroides* Linnaeus, 1758 and *Scorpio cimicoïdes* Fabricius, 1793] in a simple list of taxa. No diagnosis was

provided, no type species was designated and no mention was made of the genus *Chelifer*.

3. The entry ‘Crustaceology’ of Brewster’s (1814) *Edinburgh Encyclopædia* treated three species of pseudoscorpions, all of which are assigned to the genus *Chelifer*. Within the genus, two groups of species were diagnosed: the first (“*”) included *C. cancroides* and *C. cimicoides*; the second (“**”) contained only *C. trombidioides* Latreille, 1804 (incorrectly spelt ‘*trombidioides*’, but correctly spelt *trombidioides* in the synonymy given). The name *Obisium* is used in two different ways in this article:

(i) The editor, D. Brewster, treated ‘*Obisium* Illiger, Walckenaer’ as a synonym of ‘*Chelifer* Geoff. De Geer, Oliv. Lam. Herm. Latreille’. This is clear from the ‘Obs.’ he inserted at the end of the section on pseudoscorpions, which reads ‘These two divisions of the genus certainly have distinct characters enough to form two genera; we therefore, perhaps, should follow Mr Leach, who proposes to call the first division *Chelifer*, a name first given by Geoffroy; the second *Obsium*, a name proposed by Illiger for the genus as it now stands.’

(ii) Leach treated *Obisium* as a monotypic genus, containing only the species *Obisium trombidioides*. Leach did not give any indication of authorship for *Obisium*; the attributions of the name to Illiger in Leach (1814) are those of Brewster.

While I accept that the status of *Obisium* sensu Leach is open to different interpretations, due to the ambiguous way in which it was introduced, it seems to me that Alonso-Zarazaga errs in ignoring Brewster’s intervention in Leach (1814). Alonso-Zarazaga’s comment that ‘The name ‘*Obisium trombidioides*, Leach’s MSS.’ appears in the synonymy of [*Chelifer trombidioides*] and is not used as a valid name’ is correct, but that does not mean that *Obisium* Leach, 1814 must be considered unavailable. Article 11.6.1 allows *Obisium* Leach, 1814 to be considered available because it was treated as an available name and adopted as the name of a genus before 1961. Alonso-Zarazaga’s comment that ‘Sundevall (1833) and Harvey & Mahnert (2011), among others, were right in their treatments of *Obisium* sensu Leach as a later use of *Obisium* Illiger’ is largely irrelevant because no author interpreted the group in the same sense as Leach (i.e. as a genus including *Chelifer trombidioides*) between 1843 and 2012 (see paragraphs 4 and 9 of the original application). As for Sundevall (1833), he listed ‘*Chelifer*’ and ‘*Obisium*’ as separate genera, so he was clearly using *Obisium* in Leach’s sense, even if he attributed it to ‘Ill. Leach, Herm.’ (Judson, 2012). It is perhaps worth repeating that the lists of authors appended to generic names in the early literature are more like abbreviated bibliographies than a statement of authorship in the modern sense of the Code.

Alonso-Zarazaga’s comments about generic concepts modified through the addition or removal of species being misapplications (his ‘misidentifications’) are obviously correct, but these can only apply to later uses that do not form part of the application, since he considers Leach (1814) to have treated *Obisium* as a synonym of *Chelifer*. His interpretation is at odds with his own treatment of at least one analogous case, namely that of *Bryaxis* Kugelann, 1794 and *Bryaxis* Leach, 1817, evoked by Judson (2012). Coleopterists, including Alonso-Zarazaga (Bouchard et al., 2011, p. 185), and the Commission (Opinion 887; BZN 26: 133) have accepted *Bryaxis* Leach, 1817 as an available homonym, as opposed to a misapplication, even though Leach (1817) did not present it as a new name and was aware that it had been used before for another genus of PSELAPHINAE.

Although Alonso-Zarazaga's alternative proposals are welcome insofar as they would attain the same end, it is evident that they are largely inconsistent with his own interpretation of the case. If, as he believes, *Obisium* Leach had simply never existed, most of his proposals would be superfluous. Without a genus *Obisium* Leach, there could not be an overlooked fixation of *Chelifer trombidoides* as its type species, hence there would be no question of a synonymy between *Chthonius* and *Obisium*. Moreover, the family-group name OBISIIDAE Sundevall, 1833 would either be unavailable or an objective synonym of CHELIFERIDAE Risso [1827] and Simon's (1879) designation of a type species for *Obisium* Leach would be meaningless. Consequently, the only problems requiring action by the Commission would be Chamberlin's (1930) proposals of NEOBISIIDAE, NEOBISIINAE and *Neobisium* as replacement names for OBISIIDAE Sundevall, 1833, OBISIINAE Sundevall, 1833 and *Obisium* Leach, respectively, and his citation of Simon (1879) for the designation of *O. muscorum* as the type species of *Obisium* (and hence of its replacement, *Neobisium*). Thus, it would suffice that the Commission rule that NEOBISIIDAE, NEOBISIINAE and *Neobisium* were proposed as new taxa by Chamberlin (1930), and not as replacement names, and that the type species of *Neobisium* was designated as *Obisium muscorum* Leach, 1817 by Chamberlin (1930). These actions would assure the conservation of the names *Neobisium*, NEOBISIOIDEA, NEOBISIIDAE and NEOBISIINAE, but they would have little to do with the historical reality. I therefore maintain that the proposals in the original application represent the most suitable means of conserving these names.

Additional reference

- Bouchard, P., Bousquet, Y., Davies, A.E., Alonso-Zarazaga, M.A., Lawrence, J.F., Lyal, C.H.C., Newton, A.F., Reid, C.A.M., Schmitt, M., Ślipiński, S.A. & Smith, A.B.T. 2011. Family-group names in Coleoptera (Insecta). *ZooKeys*, **88**: 1–972.

OPINION 2369 (Case 3604)

***Helix (Helicogena) aspersa insolida* Monterosato, 1892 (currently *Erctella insolida*; Gastropoda, Pulmonata, HELICIDAE): species-group name conserved**

Abstract. Under the plenary power the Commission has conserved the species-group name *Helix (Helicogena) aspersa insolida* Monterosato, 1892 (currently *Erctella insolida*; Gastropoda, Pulmonata, HELICIDAE) by suppressing *Helix (Campylaea) insolida* Brusina, 1876 and *Helix (Campylaea) insolida* Pfeiffer & Clessin, 1881.

Keywords. Nomenclature; taxonomy; HELICIDAE; *Chilostoma insolita*; *Erctella insolida*; pulmonates; land snails; NW Sicily; Balkans.

Ruling

- (1) Under the plenary power it is hereby ruled that the following species-group names are suppressed for the purposes of both the Principle of Priority and the Principle of Homonymy:
 - (a) *insolida* Brusina, 1876, as published in the binomen *Helix insolida*;
 - (b) *insolida* Pfeiffer & Clessin, 1881, as published in the binomen *Helix insolida*.
- (2) The name *insolida* Monterosato, 1892, as published in the combination *Helix (Helicogena) aspersa* var. *insolida*, is hereby placed on the Official List of Specific Names in Zoology.
- (3) The following names are hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology:
 - (a) *insolida* Brusina, 1876, as published in the binomen *Helix insolida* and as suppressed in (1)(a) above;
 - (b) *insolida* Pfeiffer & Clessin, 1881, as published in the binomen *Helix insolida* and as suppressed in (1)(b) above.

History of Case 3604

An application to conserve the subspecific name *Helix (Helicogena) aspersa insolida* Monterosato, 1892 (currently *Erctella insolida*; Gastropoda, Pulmonata, HELICIDAE; endemic to NW Sicily), was received from Fabio Liberto (*Cefalù (Palermo), Italy*) and Ignazio Sparacio (*Palermo, Italy*) on 12 August 2012. After correspondence the Case was published in BZN 70: 160–165 (September 2013). The title, abstract and keywords of the Case were published on the Commission's website. No comments were received on this Case. The Case was sent for vote on 1 June 2015. A greater than two-thirds majority of Commissioners voted FOR the Case (19 For, 1 Against).

Decision of the Commission

At the close of the voting period on 1 September 2015 the votes were as follows:

Affirmative votes – 19: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Grygier, Halliday, Harvey, Kojima, Krell, Kullander, Lamas, Pape, Rosenberg, Štys, van Tol, Winston, Yanega and Zhou.

Negative votes – 1: Kottelat.

Fautin, Ng, Patterson, Pyle and Zhang were on leave of absence.

Voting FOR, Grygier said that the title of the Case ended with ‘conservation of the specific name’, and line 2 of the abstract similarly read, ‘conserve the specific name’. He pointed out that under Article 5.1 and the Glossary, the ‘specific name’ is the second part of a scientific name, i.e. ‘*aspersa*’ as the name was first proposed, but *aspersa* is not the subject of this Case. The actual subject is ‘*insolida*’, which was originally proposed as a ‘subspecific name’ (cf. Article 5.2). It indeed appeared as a specific name as well as a subspecific name in the title, but not in the abstract.

Original references

The following are the original references to the names placed on either an Official List or Index by the ruling given in the present Opinion:

insolida, *Helix* (*Helicogena*) *aspersa*, Monterosato, 1892, *Atti della Reale Accademia di Scienze Lettere e Belle Arti di Palermo*, 2: 26.

insolida, *Helix*, Brusina, 1876, *Bullettino della Società malacologica Italiana*, 2: 54.

insolida, *Helix*, Pfeiffer & Clessin, 1881, *Nomenclator heliceorum viventium quo continentur nomina omnium hujus familiae generum et specierum hodie cognitarum, disposita ex affinitate naturali*, Fischer, Cassellis, p. 145, n. 2928.

OPINION 2370 (Case 3634)**OMALIIDAE Handlirsch, 1904 (Insecta, Archaeorthoptera) and XENOPTERIDAE Pinto, 1986 (Insecta, Megasecoptera): emended to OMALIAIDAE and XENOPTERAIDAE respectively**

Abstract. Under the plenary power the Commission has emended the spelling of the names OMALIIDAE Handlirsch, 1904 (Insecta, Archaeorthoptera) and XENOPTERIDAE Pinto, 1986 (Insecta, Megasecoptera). The stem of the generic name *Omalia* has been emended to *Omalia-* to give OMALIAIDAE, and the stem of the generic name *Xenoptera* has been emended to *Xenoptera-* to give XENOPTERAIDAE.

Keywords. Nomenclature; taxonomy; Insecta; Archaeorthoptera; Megasecoptera; OMALIAIDAE; OMALIIDAE; XENOPTERAIDAE; XENOPTERIDAE; *Omalia*; *Omalium*; *Xenoptera*; *Xenopterum*; insects.

Ruling

- (1) Under the plenary power it has been ruled that for the purposes of Article 29 of the Code:
 - (a) the stem of the generic name *Omalia* Beneden & Coemans, 1867 is *Omalia-*;
 - (b) the stem of the generic name *Xenoptera* Pinto, 1986 is *Xenoptera-*.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Omalia* Beneden & Coemans, 1867 (gender: feminine), type species by monotypy *Omalia macroptera* Beneden & Coemans, 1867;
 - (b) *Omalium* Gravenhorst, 1802 (gender: neuter), type species by subsequent designation *Staphylinus rivularis* Paykull, 1789;
 - (c) *Xenoptera* Pinto, 1986 (gender: feminine), type species by monotypy *Xenoptera riojaensis* Pinto, 1986;
 - (d) *Xenopterum* Riek, 1955 (gender: neuter), type species by monotypy *Xenopterum crosbyi* Riek, 1955.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *crosbyi* Riek, 1955, as published in the binomen *Xenopterum crosbyi*;
 - (b) *macroptera* Beneden & Coemans, 1867, as published in the binomen *Omalia macroptera*;
 - (c) *riojaensis* Pinto, 1986, as published in the binomen *Xenoptera riojaensis*.
- (4) The following names are hereby placed on the Official List of Family-Group Names in Zoology:
 - (a) OMALIAIDAE Handlirsch, 1904, type genus *Omalia* Beneden & Coemans, 1867, spelling emended, as ruled in (1)(a) above (Insecta, Archaeorthoptera);
 - (b) OMALIIDAE MacLeay, 1825, type genus *Omalium* Gravenhorst, 1802 (Insecta, Coleoptera);

- (c) XENOPTERAIDAE Pinto, 1986, type genus *Xenoptera* Pinto, 1986, spelling emended, as ruled in (1)(b) above (Insecta, Megasecoptera);
- (d) XENOPTERIDAE Riek, 1955, type genus *Xenopterum*, Riek, 1955 (Insecta, Orthoptera).
- (5) The following names are hereby placed on the Official Index of Rejected and Invalid Family-Group Names in Zoology:
 - (a) OMALIDAE Handlirsch, 1904, spelling emended to OMALIAIDAE, as ruled in (1)(a) above (Insecta, Archaeorthoptera);
 - (b) XENOPTERIDAE Pinto, 1986, spelling emended to XENOPTERAIDAE, as ruled in (1)(b) above (Insecta, Megasecoptera).

History of Case 3634

An application to emend the spelling of the names OMALIDAE Handlirsch, 1904 (Insecta, Archaeorthoptera) and XENOPTERIDAE Pinto, 1986 (Insecta, Megasecoptera), was received from Andrew J. Ross (*Department of Natural Sciences, National Museums Scotland, Edinburgh, U.K.*), David B. Nicholson (*Department of Earth Sciences, The Natural History Museum, London, U.K.*) & Ed A. Jarzembowski (*State Key Laboratory of Palaeobiology and Stratigraphy, Nanjing Institute of Geology and Palaeontology, Chinese Academy of Sciences, Nanjing, China & Department of Earth Sciences, The Natural History Museum, London, U.K.*) on 12 July 2013. After correspondence the Case was published in BZN 70: 166–170 (September 2013). The title, abstract and keywords of the Case were published on the Commission's website. No comments were received on this Case. The Case was sent for vote on 1 June 2015. A greater than two-thirds majority of Commissioners voted FOR the Case (20 For, 0 Against).

Decision of the Commission

At the close of the voting period on 1 September 2015 the votes were as follows:

Affirmative votes – 20: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Pape, Rosenberg, Štys, van Tol, Winston, Yanega and Zhou.

Negative votes – none.

Fautin, Ng, Patterson, Pyle and Zhang were on leave of absence.

Voting FOR, Grygier said that in the abstract, it had been ill-advised to give the family names as single-i OMALIDAE and not 'correct original spelling' double-i OMALIIDAE (as in the Case's title). The single-i spellings in para. 2 should have been followed by '[sic]'. Also, in the abstract MacLeay's version of the name had a familial, not subfamilial ending, which seemed to be an error contrary to history and the title.

Original references

The following are the original references to the entries on either an Official List or Official Index in the ruling given in the present Opinion:

Omalia Beneden & Coemans, 1867, *Bulletins de l'Académie Royale des Sciences, des Lettres et des Beaux-arts de Belgique*, (2)23: 392.

Omalius Gravenhorst, 1802, *Coleoptera Microptera Brunsvicensia nec non Exoticorum quot-quot exstant in collectionibus Entomologorum Brunsvicensium in genera familias et species*. Reichard, Brunswick, p. 111.

Xenoptera Pinto, 1986, *Pesquisas*, **18**: 25.

Xenopterum Riek, 1955, *Australian Journal of Zoology*, **3**(4): 687.

crosbyi, *Xenopterum*, Riek, 1955, *Australian Journal of Zoology*, **3**(4): 687.

macroptera, *Omalia*, Beneden & Coemans, 1867, *Bulletins de l'Académie Royale des Sciences, des Lettres et des Beaux-arts de Belgique*, (2)**23**: 399.

riojaensis, *Xenoptera*, Pinto, 1986, *Pesquisas*, **18**: 25.

OMALIAIDAE Handlirsch, 1904, *Les Insectes Houillers de la Belgique. Mémoires du Musée Royal d'Histoire Naturelle de Belgique*, **3**: 13 (emended from OMALIDAE).

OMALIDAE Handlirsch, 1904, *Les Insectes Houillers de la Belgique. Mémoires du Musée Royal d'Histoire Naturelle de Belgique*, **3**: 13.

OMALIIDAE MacLeay, 1825, *Number I. of Annulosa Javanica, or an attempt to illustrate the natural affinities and analogies of the insects collected in Java by Thomas Horsfield, M.D. F.L. & G.S. and deposited by him in the museum of the Honourable East-India Company.* Kingsbury, Parbury & Allen, London, p. 49 (emended from OMALIDAE).

XENOPTERAIDAE Pinto, 1986, *Pesquisas*, **18**: 25 (emended from XENOPTERIDAE).

XENOPTERIDAE Pinto, 1986, *Pesquisas*, **18**: 25.

XENOPTERIDAE Riek, 1955, *Australian Journal of Zoology*, **3**(4): 687.

OPINION 2371 (Case 3617)***Habroleptoides confusa* Sartori & Jacob, 1986 (Insecta, Ephemeroptera, LEPTOPHLEBIIDAE): precedence given over *Habroleptoides carpatica* Bogoescu & Craşnaru, 1930**

Abstract. Under the plenary power the Commission has conserved the specific name *Habroleptoides confusa* Sartori & Jacob, 1986 for a well-known European mayfly (family LEPTOPHLEBIIDAE) by reversing precedence with the senior subjective synonym *Habroleptoides carpatica* Bogoescu & Craşnaru, 1930, which has seldom been used since its first publication, while the junior synonym is very widely used.

Keywords. Nomenclature; taxonomy; Ephemeroptera; LEPTOPHLEBIIDAE; *Habroleptoides confusa*; *Habroleptoides carpatica*; Romania; Europe; mayflies.

Ruling

- (1) Under the plenary power the Commission has ruled that the name *confusa* Sartori & Jacob, 1986, as published in the binomen *Habroleptoides confusa*, be given precedence over the name *carpatica* Bogoescu & Craşnaru, 1930, as published in the binomen *Habroleptoides carpatica*, whenever the two are considered to be synonyms.
- (2) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *confusa* Sartori & Jacob, 1986, as published in the binomen *Habroleptoides confusa*, with the endorsement that it is to be given precedence over the name *carpatica* Bogoescu & Craşnaru, 1930, as published in the binomen *Habroleptoides carpatica*, whenever the two are considered to be synonyms;
 - (b) *carpatica* Bogoescu & Craşnaru, 1930, as published in the binomen *Habroleptoides carpatica*, with the endorsement that it is not to be given priority over the name *confusa* Sartori & Jacob, 1986, as published in the binomen *Habroleptoides confusa*, whenever the two are considered to be synonyms.

History of Case 3617

An application to conserve the specific name *Habroleptoides confusa* Sartori & Jacob, 1986 for a well-known European mayfly (family LEPTOPHLEBIIDAE) by reversing precedence with the senior subjective synonym *Habroleptoides carpatica* Bogoescu & Craşnaru, 1930, which has seldom been used since its first publication, while the junior synonym is very widely used, was received from Éva Vánca (Babes-Bolyai University, Department of Taxonomy and Ecology, Cluj-Napoca, Romania) and Michel Sartori (Museum of Zoology, Lausanne, Switzerland) on 3 March 2013. After correspondence the Case was published in BZN 70: 82–85 (June 2013). The title, abstract and keywords of the Case were published on the Commission's website. No

comments were received on this case. The Case was sent for vote on 1 March 2015. A two-thirds majority of Commissioners voted FOR the Case (16 For, 8 Against).

Decision of the Commission

At the close of the voting period on 1 June 2015 the votes were as follows:

Affirmative votes – 16: Ballerio, Bogutskaya, Brothers, Fautin, Halliday, Harvey, Kojima, Kottelat, Krell, Lamas, Patterson, Rosenberg, Winston, Yanega, Zhang and Zhou.

Negative votes – 8: Alonso-Zarazaga, Bouchet, Grygier, Kullander, Ng, Pape, Štys and van Tol.

Pyle was on leave of absence.

Voting AGAINST, Alonso-Zarazaga said that since *Habroleptoides carpatica* was not a forgotten species (merely a poorly known species), and that both competing names were proposed during the 20th century, he considered that the Principle of Priority must be applied. Also voting AGAINST, Bouchet said that although Para. 5 of the application stated that ‘The species name [*Habroleptoides confusa*] is also widely used in European legislation and projects’, all the examples given are EU-funded projects, and none represents EU legislation, so he found that this was a one-sided presentation of the facts. *Habroleptoides carpatica* was listed as ‘valid / species inquirenda’ in another EU-funded project (Fauna Europaea, http://www.faunaeur.org/full_results.php?id=193476) and at least one other database (<http://www.ephemeroptera.de>). A quick search on the internet revealed at least one additional reference to *Habroleptoides carpatica* as a valid species [Prisecaru et al., 2014, Universitatea ‘Vasile Alecsandri’ din Bacău, Studii și Cercetări, Biologie, **23**(2): 20–30], admittedly published after the original submission in BZN. He thought it was fair to give credit to Constantin Bogoescu for the recognition of *Habroleptoides carpatica* as a distinct species. He suggested that the holotype of *H. confusa* could be made the neotype of *H. carpatica*, which did not require a Commission’s ruling. Also voting AGAINST, Grygier said that the proposed solution could have been made tighter by naming one of the topotypic specimens studied by Vánsca et al. (2013) as the neotype of *H. carpatica*; otherwise the possibility remained that those specimens were not true *H. carpatica*, but *H. confusa* dispersed into the region sometime after 1930. If the authors felt they could not designate such a neotype themselves because of possible conflict with Article 75.3.5 inasmuch as certain features of the topotypes were inconsistent with the original description, they could have included such a designation among the present proposals. In any event, he was not fully convinced that adopting the name *H. carpatica* for this nominal species would truly be disruptive. Ever since the original authors of *H. confusa* noted the possible synonymy with *H. carpatica*, this sword of Damocles had been ever-present; also, since the name in use for this species already changed once without great disruption, from *C. modesta* to *C. confusa*, why should another such change, especially one long-foreshadowed, be any different? Also voting AGAINST, Kullander noted that synonyms do occur, but the Principle of Priority would solve the problem.

Original references

The following are the original references to the names placed on an Official List by the ruling given in the present Opinion:

- confusa*, *Habroleptoides*, Sartori & Jacob, 1986, *Revue Suisse de Zoologie*, **93**(3): 687.
carpatica, *Habroleptoides*, Bogoescu & Crăsnaru, 1930, *Publicațiunile Societății Naturaliștilor din România*, **11**: 190–194.

OPINION 2372 (Case 3605)

PHYCINAE Lyneborg, 1976 (Insecta, Diptera, THEREVIDAE): spelling emended to PHYCUSINAE and *Phycis* Walbaum, 1792 (Osteichthyes, Gadiformes, PHYCIDAE): usage conserved by designation of *Blennius phycis* Linnaeus, 1766 as the type species

Abstract. The Commission has removed homonymy between the family-group names PHYCINAE Swainson, 1838 (Osteichthyes, Gadiformes, PHYCIDAE) and PHYCINAE Lyneborg, 1976 (Insecta, Diptera, THEREVIDAE) by emending the stem of the genus-group name *Phycus* Walker, 1850, on which the insect family-group name is based, and has changed the family-group name to PHYCUSINAE, leaving the fish family-group name, based on *Phycis* Walbaum, 1792, unaltered. The prevailing usage of *Phycis* Walbaum, 1792 has been conserved by setting aside all previous type species fixations and designating *Blennius phycis* Linnaeus, 1766 as the type species.

Keywords. Nomenclature; taxonomy; Insecta; Osteichthyes; Diptera; Gadiformes; Lepidoptera; PHYCIDAE; PYRALIDAE; THEREVIDAE; PHYCINAE; PHYCUSINAE; PHYCITINAE; *Phycus*; *Phycis*; *Phycita*; *Blennius phycis*; *Xylophagus canescens*; *Phycus brunneus*; stiletto flies; moths; hakes; terrestrial; marine; Atlantic.

Ruling

- (1) Under the plenary power it is hereby ruled that:
 - (a) for the purposes of Article 29 of the Code the stem of the generic name *Phycus* Walker, 1850, is *Phycus*-;
 - (b) all previous type species fixations for the generic name *Phycis* Walbaum, 1792 are hereby set aside and *Blennius phycis* Linnaeus, 1766 is designated as the type species.
- (2) The following names are hereby placed on the Official List of Generic Names in Zoology:
 - (a) *Phycus* Walker, 1850 (gender: masculine), type species *Xylophagus canescens* Walker, 1848, by monotypy (Insecta, Diptera);
 - (b) *Phycis* Walbaum, 1792 (gender: feminine), type species *Blennius phycis* Linnaeus, 1766 (Osteichthyes, Gadiformes), as ruled in (1) above.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *canescens* Walker, 1848, as published in the binomen *Xylophagus canescens* (specific name of the type species of *Phycus* Walker, 1850) (Insecta, Diptera);
 - (b) *phycis* Linnaeus, 1766, as published in the binomen *Blennius phycis* (specific name of the type species of *Phycis* Walbaum, 1792) (Osteichthyes, Gadiformes), as ruled in (1) above.
- (4) The name PHYCUSINAE Lyneborg, 1976, type genus *Phycus* Walker, 1850 (spelling emended by the ruling in (1) above) (Insecta, Diptera) is hereby placed on the Official List of Family-Group Names in Zoology.

- (5) The name PHYCINAE Lyneborg, 1976 (an incorrect original spelling of PHYCUSINAE, as ruled in (1) above) (Insecta, Diptera) is hereby placed on the Official Index of Rejected and Invalid Family-Group Names in Zoology.

History of Case 3605

An application to remove homonymy between the family-group names PHYCINAE Swainson, 1838 (Osteichthyes, Gadiformes, PHYCIDAE) and PHYCINAE Lyneborg, 1976 (Insecta, Diptera, THEREVIDAE) and to designate *Blennius phycis* Linnaeus, 1766 as the type species of *Phycis* Walbaum, 1792 was received from Stephen D. Gaimari & Martin Hauser (*California Department of Food and Agriculture, Plant Pest Diagnostics Center, Sacramento, CA, U.S.A.*) and Ronald Fricke (*Staatliches Museum für Naturkunde Stuttgart, Ichthyology, Stuttgart, Germany*) on 23 August 2012. After correspondence the Case was published in BZN 70: 22–29 (March 2013). The title, abstract and keywords of the Case were published on the Commission's website. Comments on this Case were published in BZN 70(2): 113 (with alternative proposals); 70(4): 252–253 (author's response and rejection of the alternative proposals). The two sets of proposals were sent for vote on 1 March 2015. A greater than two-thirds majority of Commissioners voted FOR set A (21 For, 2 Against, 1 Split). A majority of Commissioners voted AGAINST set B (2 For, 20 Against, 1 Split).

Decision of the Commission

At the close of the voting period on 1 June 2015 the votes were as follows:

Set A (original proposals):

Affirmative votes – 21: Ballerio, Bogutskaya, Brothers, Fautin, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Ng, Pape, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – 2: Alonso-Zarazaga, Bouchet.

Split – 1: Grygier (FOR all except AGAINST (3)(a))

Pyle was on leave of absence.

Set B (alternative proposals):

Affirmative votes – 2 Alonso-Zarazaga, Bouchet.

Negative votes – 20: Ballerio, Bogutskaya, Brothers, Fautin, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Ng, Pape, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega and Zhang.

Split – 1: Grygier FOR (1)(b), (2)(b), (3)(b); AGAINST all others.

Abstained: – 1: Zhou

Pyle was on leave of absence.

Voting FOR set A, Kojima said that he preferred the proposal that tried to ensure the stability of the name(s) to those that tried to keep their Latin/Greek grammatical consistency. Also voting FOR set A, Kottelat said that he voted for the whole set A in order to close the case, although Proposal (1)(b) was either not needed or

incomplete. He explained that the application had stated that the original type species of *Phycis* was *Gadus bifurcus* by monotypy and that its type series included material of two species, *Phycis phycis* and *Phycis blennoides*. The application further stated that ‘Günther (1862) acted as the First Reviser . . . treating *Gadus bifurcus* . . . as a junior subjective synonym of *Phycis blennoides*’. Listing *Gadus bifurcus* as synonym of one or the other species was not a First Reviser action and did not fix the identity of the nominal species, which could only be fixed by a neotype designation. In addition, the application did not mention that *Blennius phycis* (currently *Phycis phycis*) was based on several pre-Linnean literature sources and its type series could also include more than one species. No syntypes of *B. phycis* were believed to be in existence, warranting a type fixation. Designation of the same specimen as neotype for both *Gadus bifurcus* and *Blennius phycis* would close the Case. Further, the argument that ‘in the future the two species may be classified in separate genera, was misleading, as the case could be re-visited if and when it actually happened. Also Voting FOR set A, Kullander commented that whereas he sympathised with Option B presented by Alonso-Zarazaga, and using PHYCIDIDAE/PHYCIDINAE would make the name easier to remember, current usage favoured PHYCINAE.

Voting AGAINST set A and FOR set B, Bouchet said that the applicants were mistaken to believe that, in the event the family name based on *Phycis* be ruled to be PHYCIDIDAE, the Commission would need to use its plenary power to suspend application of the Principle of Priority for Swainson’s (1838) family-group name. He added that Miguel Alonso-Zarazaga’s proposals (set B) elegantly solved the issue raised in the original application.

SPLITTING his vote, Grygier said that in either set of proposals, he saw no justification under Article 78.4.2 for placing *Xylophagus canescens* on the Official List, since it is not the object of any specific ruling under the plenary or specific powers. As for which stem to emend, he accepted that Articles 29.3.1.1 and 29.5 were introduced into the Fourth Edition of the Code largely to accommodate the continued use by ichthyologists of elided stems of genera ending in -is, and that maintenance of PHYCIDAE as the valid name for the fish family was by no means improper in the absence of objections from dipterists.

Original references

The following are the original references to the names placed on either an Official List or Index by the ruling given in the present Opinion:

- canescens*, *Xylophagus*, Walker, 1848, *List of the specimens of dipterous insects in the collection of the British Museum*, vol. 1. British Museum, London, p. 129.
- phycis*, *Blennius*, Linnaeus, 1766, *Systema Naturae*, Ed. 12, vol. 1, part 1, Salvii, Holmiae, p. 422.
- Phycis* Walbaum, 1792, *Petri Artedi sueci Genera Piscium in quibus systema totum Ichthyologiae proponitur cum classibus, ordinibus, generum characteribus, specierum differentiis, observationibus plurimis: redactis Speciebus 242 ad Genera 52. Ichthyologiae pars 3*. Ant. Ferdin. Röse, Grypeswaldiae, p. 575.
- Phycus* Walker, 1850, *Diptera*, vol. 1, in Saunders, W.W. (Ed.), *Insecta Saundersiana: or characters of undescribed insects in the collection of William Wilson Saunders*, John Van Voorst, London, p. 2.
- PHYCUSINAE Lyneborg, 1976, *Bulletin of the British Museum, Entomology*, **33**(3): 197 (spelling emended from PHYCINAE).
- PHYCINAE Lyneborg, 1976, *Bulletin of the British Museum, Entomology*, **33**(3): 197 (ruled to be an incorrect original spelling of PHYCUSINAE).

OPINION 2373 (Case 3626)***Phoronis* Wright, 1856 (Phoronida) and *P. muelleri* de Selys Longchamps, 1903: both names conserved**

Abstract. Under the plenary power the Commission has conserved the generic name *Phoronis* Wright, 1856 and the specific name *Phoronis muelleri* de Selys Longchamps, 1903 in their accustomed use by supressing the generic name *Actinotrocha* Müller, 1846 and the specific name *branchiata* Müller, 1846 (as published in the binomen *Actinotrocha branchiata*) for the purposes of the Principle of Priority.

Keywords. Nomenclature; Phoronida; *Phoronis*; *Phoronis muelleri*; *Phoronis hippocrepia*; *Actinotrocha*; *Actinotrocha branchiata*; horseshoe worms.

Ruling

- (1) Under the plenary power the following names are suppressed for the purposes of the Principle of Priority, but not for those of the Principle of Homonymy:
 - (a) *Actinotrocha* Müller, 1846;
 - (b) *branchiata* Müller, 1846, as published in the binomen *Actinotrocha branchiata*.
- (2) (The name *Phoronis* Wright, 1856 (gender: feminine), type species *P. hippocrepia* Wright, 1856, as designated in BZN 70: 157 (June 2013), is hereby placed on the Official List of Generic Names in Zoology.
- (3) The following names are hereby placed on the Official List of Specific Names in Zoology:
 - (a) *muelleri* de Selys Longchamps, 1903, as published in the binomen *Phoronis muelleri*;
 - (b) *hippocrepia* Wright, 1856, as published in the binomen *Phoronis hippocrepia*.
- (4) The name *Actinotrocha* Müller, 1846 is hereby placed on the Official Index of Rejected and Invalid Generic Names in Zoology, as suppressed in (1)(a) above.
- (5) The name *branchiata* Müller, 1846, as published in the binomen *Actinotrocha branchiata* Müller, 1846 is hereby placed on the Official Index of Rejected and Invalid Specific Names in Zoology, as suppressed in (1)(b) above.

History of Case 3626

An application to conserve the names *Phoronis* Wright, 1856 (PHORONIDA) and *P. muelleri* de Selys Longchamps, 1903, was received from Claus Nielsen (*Natural History Museum of Denmark, University of Copenhagen, Copenhagen, Denmark*) on 10 May 2013. After correspondence the Case was published in BZN 70: 157–159 (September 2013). The title, abstract and keywords of the Case were published on the Commission's website. Comments on this Case were published in BZN 70(4): 249; 71(1): 26–28 (with alternative proposals). The author in correspondence agreed with the alternative proposals. The Case (with the alternative proposals) was sent for vote on 1 March 2015. A greater than two-thirds majority of Commissioners voted FOR the Case (24 For, 0 Against).

Decision of the Commission

At the close of the voting period on 1 June 2015 the votes were as follows:

Affirmative votes – 24: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Ng, Pape, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – none.

Split vote– 1: Grygier (FOR all except (3)(b))

Pyle was on leave of absence.

Voting FOR, Bouchet said that ‘de Selys Longchamps’ was a Belgian patronymic name implying that ‘de’ was part of the name. Also voting FOR, Štys said that Nielsen’s original proposal was too short and omitted some nomenclaturally important points. Hence he voted for the modified version.

SPLITTING his vote, Grygier said that a different solution to the generic-level problem would have been for the Commission to declare *Actinotrocha* a collective group for species-group taxa of phoronidan larvae. Then, under Articles 23.7.2 and 67.14, *Actinotrocha* would no longer compete in priority with *Phoronis* nor would it have a type species. However, this would not have solved the problem of the competing specific names, since *A. branchiata* would still have priority over *P. muelleri*. Accordingly, he accepted all the proposals for suppression, but saw no justification under Article 78.4.2 for putting *P. hippocrepia* (which was not the object of any other ruling) on the Official List.

Original references

The following are the original references to the entries on either an Official List or Official Index in the ruling given in the present Opinion:

Actinotrocha Müller, 1846; *Archiv für Anatomie, Physiologie und Wissenschaftliche Medizin*, **1846**: 101.

branchiata, *Actinotrocha* Müller, 1846, *Archiv für Anatomie, Physiologie und Wissenschaftliche Medizin*, **1846**: 101

Phoronis Wright, 1856, *Edinburgh New Philosophical Journal, New Series*, **4**: 316.

muelleri, *Phoronis*, de Selys Longchamps, 1903, *Wissenschaftliche Meeresuntersuchungen, Abteilung Helgoland, Neue Folge*, **6**: 9.

hippocrepia, *Phoronis*, Wright, 1856, *Edinburgh New Philosophical Journal, New Series*, **4**: 316.

OPINION 2374 (Case 3599)

***Coluber irregularis* Leach in Bowdich, 1819 (currently *Philothamnus irregularis*; Reptilia, Squamata): name conserved**

Abstract. Under the plenary power the Commission has conserved the specific name *Coluber irregularis* Leach in Bowdich, 1819 (currently *Philothamnus irregularis*) for the African northern green bush snake placed on the Official List by a ruling in Opinion 328, by ruling that it is not invalid by reason of being a junior primary homonym of *Coluber irregularis* Bechstein, 1802 (currently *Boiga irregularis*), used for the brown tree snake, known from Indonesia, Australia, Papua New Guinea, Melanesia and Guam.

Keywords. Nomenclature; taxonomy; Reptilia; Squamata; COLUBRIDAE; *Coluber*; *Philothamnus irregularis*; *Boiga irregularis*; green bush snake; brown tree snake; Africa; Indonesia; Australia; Papua New Guinea; Melanesia.

Ruling

- (1) Under the plenary power the Commission has ruled that the specific name *Coluber irregularis* Leach in Bowdich, 1819 is not invalid by reason of being a junior primary homonym of *Coluber irregularis* Bechstein, 1802.
- (2) The entry on the Official List of Specific Names in Zoology for the specific name *irregularis* Leach in Bowdich, 1819, as published in the binomen *Coluber irregularis*, is hereby emended to record that it is not invalid by reason of being a junior primary homonym of *Coluber irregularis* Bechstein, 1802.

History of Case 3599

An application to conserve the specific name *Coluber irregularis* Leach in Bowdich, 1819 (currently *Philothamnus irregularis*) for the African northern green bush snake by ruling that it is not invalid by reason of being a junior primary homonym of *Coluber irregularis* Bechstein, 1802 (currently *Boiga irregularis*), used for the brown tree snake, known from Indonesia, Australia, Papua New Guinea, Melanesia and Guam, was received from Danny Meirte (*Royal Museum for Central Africa, Tervuren, Belgium*) on 10 July 2012. After correspondence the Case was published in BZN 70: 89–98 (June 2013). The title, abstract and keywords of the Case were published on the Commission's website. No comments were received on this Case. The Case was sent for vote on 1 March 2015. A greater than two-thirds majority of Commissioners voted FOR the Case (24 For, 0 Against).

Decision of the Commission

At the close of the voting period on 1 June 2015 the votes were as follows:

Affirmative votes – 24: Alonso-Zarazaga, Ballerio, Bogutskaya, Bouchet, Brothers, Fautin, Grygier, Halliday, Harvey, Kojima, Kottelat, Krell, Kullander, Lamas, Ng, Pape, Patterson, Rosenberg, Štys, van Tol, Winston, Yanega, Zhang and Zhou.

Negative votes – none.

Pyle was on leave of absence.

Original references

The following is the original reference to the entry on the Official List emended by the ruling given in the present Opinion:

Coluber, irregularis, Leach in Bowdich, 1819, *Mission from Cape Coast Castle to Ashantee*. John Murray, London, p. 494.

Notice of closure of Cases

The following Cases, for which receipts as new applications to the Commission were published though the cases were never published in full, are now closed:

Broghammerus Hoser, 2004 (Reptilia, Serpentes, PYTHONIDAE); *Adelynkimberlea* Hoser, 2012 (Reptilia, Sauria, AGAMIDAE); *Swilesaurus* Hoser, 2013 and *Funkisaurus* Hoser, 2013 (Reptilia, Sauria, GERRHOSAURIDAE): proposed confirmation of the availability of the generic names. R. Hoser (Case 3647; acknowledgement of receipt published in BZN 71: 1)

Strix omanensis Robb et al., 2013 (Aves, STRIGIDAE): declaration as a *nomen dubium*. A. Townsend Peterson (Case 3649; acknowledgement of receipt published in BZN 71: 1).

Geophilus easoni Arthur, Foddai, Kettle, Lewis, Luczynski & Minelli, 2001 (Chilopoda): proposed conservation of the specific name. L. Bonato & A. Minelli (Case 3649; acknowledgement of receipt published in BZN 72: 2)

The following Cases, for which receipts as new applications to the Commission were published though the cases were published as nomenclatural notes, are now closed:

BOLTONOCOSTIDAE Carpenter, 1985 (Insecta, Hypoperlida): a replacement name for ORTHOCOSTIDAE Bolton, 1912. A.J. Ross, D.B. Nicholson & E.A. Jarzembowski (Case 3636; acknowledgement of receipt published in BZN 70: 152; published as a nomenclatural note in BZN 70: 291–292).

Liturgusa Saussure, 1869 (Insecta, Mantodea, LITURGUSIDAE): proposed conservation as the correct original spelling. G.J. Svenson (Case 3646; acknowledgement of receipt published in BZN 70: 216; published as a nomenclatural note in BZN 71: 60–66).

Peckhamia Simon, 1901 (Araneae, SALTICIDAE): proposed conservation by suppression of a senior synonym. D. Richman (Case 3663; acknowledgement of receipt published in BZN 71: 145; published as a nomenclatural note in BZN 72: 102–105).

Monograph on Cretaceous corals by Filkorn & Pantoja-Alor (2009) (Cnidaria, Anthozoa, Scleractinia): proposed acceptance of the CD-ROM edition as a published work. H.F. Filkorn & J. P-Alor (Case 3675; acknowledgement of receipt published in BZN 72: 1; published as a nomenclatural note in BZN 72: 93–101).

Corrigendum

There is a misprint in the title of CASE 3658 (BZN 71(3): 170, which should begin ‘*Calyptorhynchus baudinii* Lear, 1832 (Aves, CACATUIDAE): . . .’

Candidate Part of List of Available Names (LAN) for species-group taxa in the phylum Rotifera – period of public commentary of the revised proposal begins

Following ICZN Article 79 (Chapter 17 <http://www.nhm.ac.uk/hosted-sites/iczn/code/>), a committee of experts developed a *Candidate Part of the List of Available Names* for species of Rotifera from the start of zoological nomenclature to the year 2000. Details of how the Candidate Part was assembled are described in *Zootaxa* **3179**: 61–68 (2012) by the expert rotifer taxonomy committee of H. Segers, W.H. De Smet, C. Fischer, D. Fontaneto, E. Michaloudi, R.L. Wallace and C.D. Jersabek (<http://www.mapress.com/zootaxa/2012/f/zt03179p068.pdf>). Following Article 79, a notice was published in BZN **69**: 2, March 2012 and the *Candidate Part* was made available from 31 March 2012 to 30, March 2013, to receive public comment. At the close of this period the proposal was referred to its *ad hoc* committee for it to receive comments (as per Article 79.2.2.3 of the Code). In April 2014 the *ad hoc* committee informed the rotifer expert committee that they have recommended considering a revised proposal. The conditions of Article 79.2.2.4 have been met. In conformity with Article 79.2.2.5, a request has been made by the *ad hoc* committee that a section about how the authors of the proposed Candidate List have responded to reviewers' comments made on the original candidate part were included on a website. The revised proposal, taking into account the comments received, is now being made available at <http://rotifera.hausdernatur.at/Home/RotiferLAN> and <http://iczn.org/content/lan-committees>, and comments may be sent to the Rotifera Committee (rotiferaLAN@gmail.com), or to the Commission Secretariat (iczn@nhm.ac.uk). This second year of comment will begin on 20 December 2015 and will end on 19 December 2016.

The candidate part is divided into two sections. Section A includes names that are proposed to be included in the List of Available Names; Section B includes names of rotifers that are proposed not to be included in the LAN for reasons described in *Zootaxa* **3179**: 61–68 (2012). Comments are invited on both sections.

Candidate Part of List of Available Names (LAN) for genus-group taxa in the phylum Rotifera – period of public commentary begins

Following Article 79 of the Code (Chapter 17 <http://www.nhm.ac.uk/hosted-sites/iczn/code/>), a committee of experts developed a *Candidate Part of the List of Available Names* for genus-group taxa of Rotifera from the start of zoological nomenclature to the year 2000. For each name, this Candidate Part contains the following information:

- Correct spelling of the name;
- Its bibliographic reference, authorship, date of publication (availability), and, if appropriate, its nomenclatural status;
- The name, status, and way of fixation of its name-bearing type; and
- If the name has been subject of a Commission ruling, the relevant Opinion(s).

For information and ease of retrieval, the taxonomic status and gender of each genus name, and, if appropriate, additional information on the name is added between square brackets. The latter elements do not form part of the List of Available Names proper and would not be covered under Article 79.4 of the Code.

Following Article 79, the Candidate Part is available for a year to receive public comment. It can be downloaded from: <http://rotifera.hausdernatur.at/Home/RotiferLAN> and <http://iczn.org/content/lan-committees>, and comments may be sent to the Rotifer Committee (rotiferaLAN@gmail.com), or to the Commission Secretariat (iczn@nhm.ac.uk). The year of comment will begin on 20 December 2015 and will end on 19 December 2016.

The Candidate Part contains a single section and includes all names established, or in use for taxa in Rotifera. For information, an appendix listing names of genera that have been established for use in Rotifera but that are based on type species that do not pertain to the phylum is added. This includes the name *Eretmia* Gosse 1886, suppressed for the purposes of the Principle of Priority but not for those of the Principle of Homonymy and attributed, with reservation, to Rotifera (sub Rotatoria) in Opinion 816 BZN 24: 149–150 (June, 1967). As far as can be judged from the drawing of the type species (*Eretmia pentathrix* Gosse, 1886), the organism is likely to be a filose amoeba (?*Euglypha* or ?*Scutiglypha*; Rhizaria), and not a rotifer.

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PUBLICATION DATES AND PAGINATION OF VOLUME 72 (2015)

<i>Part No.</i>	<i>Pages in Part</i>	<i>Date of publication</i>
1	1–106	31 March 2015
2	107–178	30 June 2015
3	179–265	30 September 2015
4	267–344	20 December 2015

INSTRUCTIONS TO BINDER

The present volume should be bound up as follows:
Title page, Table of Contents (I–VI), 1–344

Note: the covers of the four parts should be bound with the volume

The Bulletin of Zoological Nomenclature

ICZN The Official Periodical
of the International Commission
on Zoological Nomenclature

Volume 72, 2015

Published on behalf of the Commission by
The Trustees of the Natural History Museum
Cromwell Road
London, SW7 5BD, U.K.

ISSN 0007-5167 (print) ISSN 2057-0570 (online)
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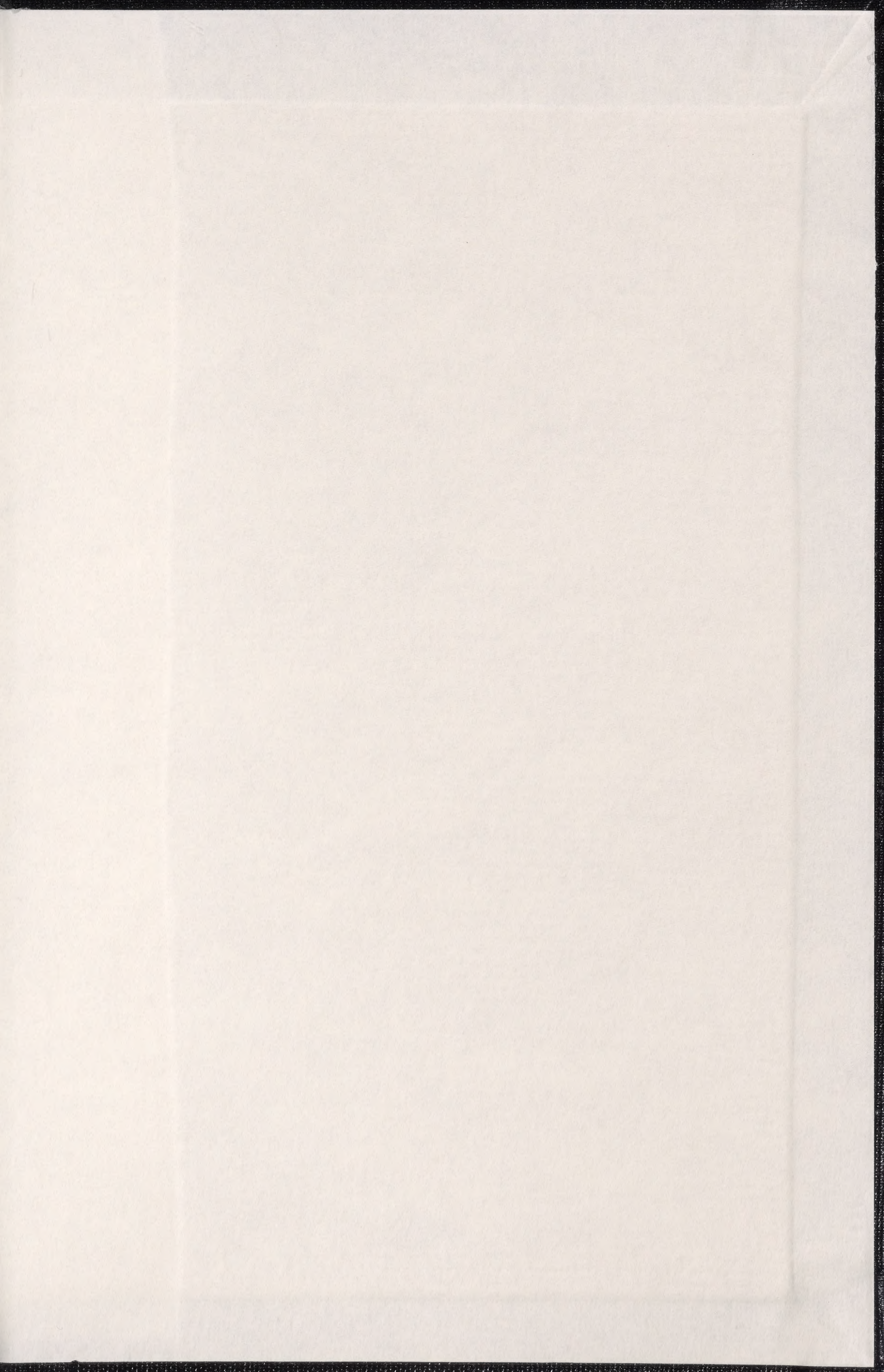


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